MINISTRY OF ENERGY AND PUBLIC UTILITIES

Annual Report

July 2018-June 2019






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List of Abbreviations

AFD	Agence Francaise de Developpement
BMF	Build Mauritius Fund
CEB	Central Electricity Board
CWA	Central Water Authority
EEMO	Energy Efficiency Management Office
IAEA	International Atomic Energy Agency
IRENA	International Renewable Energy Agency
IWRM	Integrated Water Resources Management
KW	Kilowatt
MARENA	Mauritius Renewable Energy Agency
MEPU	Ministry of Energy and Public Utilities
MW	Megawatt
RPA	Radiation Protection Authority
URA	Utility Regulatory Authority
WMA	Wastewater Management Authority
WRU	Water Resources Unit

Foreword by Deputy Prime Minister, Minister of Energy and Public Utilities

The 2018/19 Annual Report of my Ministry highlights the remarkable transition achieved in the field of renewable energy and the substantial improvements in the supply of potable water to the population.

By June 2019, nine solar farms were already operating with a total capacity of more than 60 MW as compared to only one in 2014. 16 Medium scale Net-Metering Scheme projects for total of 3.27 MW were operational and 1,209 solar installations had already been commissioned under the SSDG project.

In May 2019, the Central Electricity Board launched a new SSDG Scheme based on Net-Billing principle, targeting residential for a total targeted capacity of 5 MW over a period of 3 years. It installed 4 MW battery storage at Henrietta and Amaury and planned to increase battery storage by 14 MW by 2020.

1000 solar panels had been installed under the Home Solar Scheme dedicated to low income families in the Social Tariff 110 A, who will benefit from 50 kWh per month of free electricity over a period of 20 years. 50% of the beneficiaries are female headed households. About 70,000 low income households benefitted from a lower electricity tariff.

The Energy Efficiency Management Office implemented mandatory labeling and energy audits while sensitizing the public on the importance of efficient use of energy.

In the water sector, by June 2019 about 438 kilometres of pipes had been replaced, three service reservoirs constructed and the Bagatelle Water Treatment Plant was almost completed. 10 filtration plants had been installed and 10 duplicate boreholes drilled. 8 new boreholes had been put into operation. The number of consumers receiving 24 hours of water supply had increased to over 245,000 subscribers. Government provided about over Rs 6 Billion to the Central Water Authority as compared to only Rs 556 m from 2005 to 2014.

In the wastewater sector, several projects were completed in the most exposed regions, Marcel Cabon, Kensington, Cite Palmerstone, Cite la Cure, Cite Paul et Virginie, Tranquebar, Highlands. Service to the public was improved and sewerage projects were completed on time without cost overruns.

We introduced the Radiation Safety and Nuclear Security Act, which is applicable to the State, covers nuclear security and domesticates eight conventions of the International Atomic Energy Agency.

I thank all the employees of the parastatal organizations, the officials of my Ministry and all the regional and international agencies for their support.

Hon Ivan Leslie Collendavelloo, G.C.S.K, SC,
Deputy Prime Minister,
Minister of Energy and Public Utilities

Introduction

The Annual Report describes the main activities of the Ministry during the financial year 2018/19. The budget of the Ministry amounted to Rs 3.522 billion of which Rs 3.260 billion was earmarked for capital projects. Rs 2.093 billion were meant for water projects, mainly replacement of water pipes and Rs 1.145 billion for wastewater projects.

The Ministry participated in the Public Sector Transformation Strategy. An Energy Efficiency Mobile App was developed and the Ministry initiated action to adopt E- procurement system. 27 vacancies, mostly in technical grades were filled. The Ministry also initiated actions for the implementation of the newly enacted Radiation Safety and Nuclear Security Act.

The Ministry organised weekly meetings of the Water Resources Monitoring Committee to take note of the meteorological forecasts, the status of water resources and measures to ensure regular water supply. Budget monitoring exercises were carried out regularly to monitor the implementation of capital projects.

Dr Dhanandjay Kawol
Permanent Secretary
September 2019

The report

This Annual Report summarises major actions of the Ministry of Energy and Public Utilities for period July 2018 to June 2019.

Part I sets out the vision, mission of the Ministry, its roles and functions, its staffing and organisation structure as well as the staffing of parastatal bodies and departments/ units falling under its jurisdiction.

Part II highlights the achievements of the Ministry and the implementation of budget measures and implementation of capital projects.

Part III provides information on the financial performance of the Ministry.

Part IV is about the strategic direction of the Ministry.

PART 1 - THE MINISTRY OF ENERGY AND PUBLIC UTILITIES

1.1 About Ministry

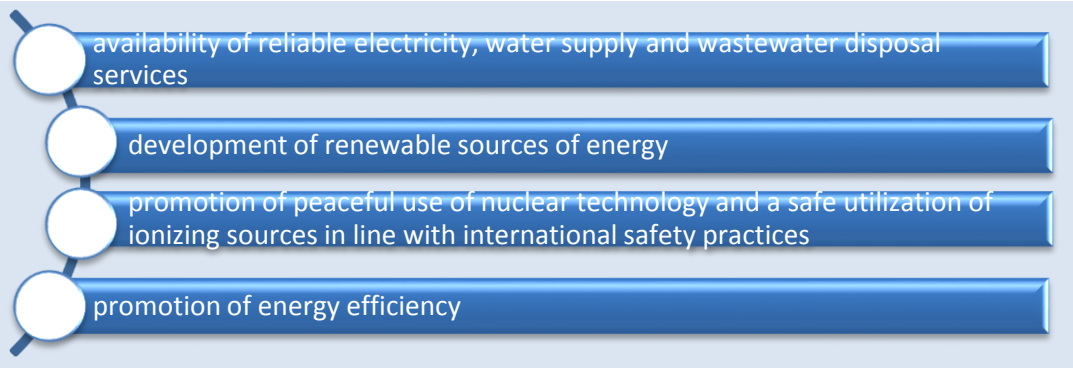
The Ministry of Energy and Public Utilities has the mandate to formulate policies and strategies for the energy, water, wastewater sectors and radiation safety and Nuclear security and is responsible for the management of water resources in the country.

1.2 Vision

Ensure energy and water security, safe disposal of wastewater and peaceful use of nuclear technology and ionizing sources.

1.3 Mission

To fulfil our commitment to the nation, by ensuring-



1.4 Functions

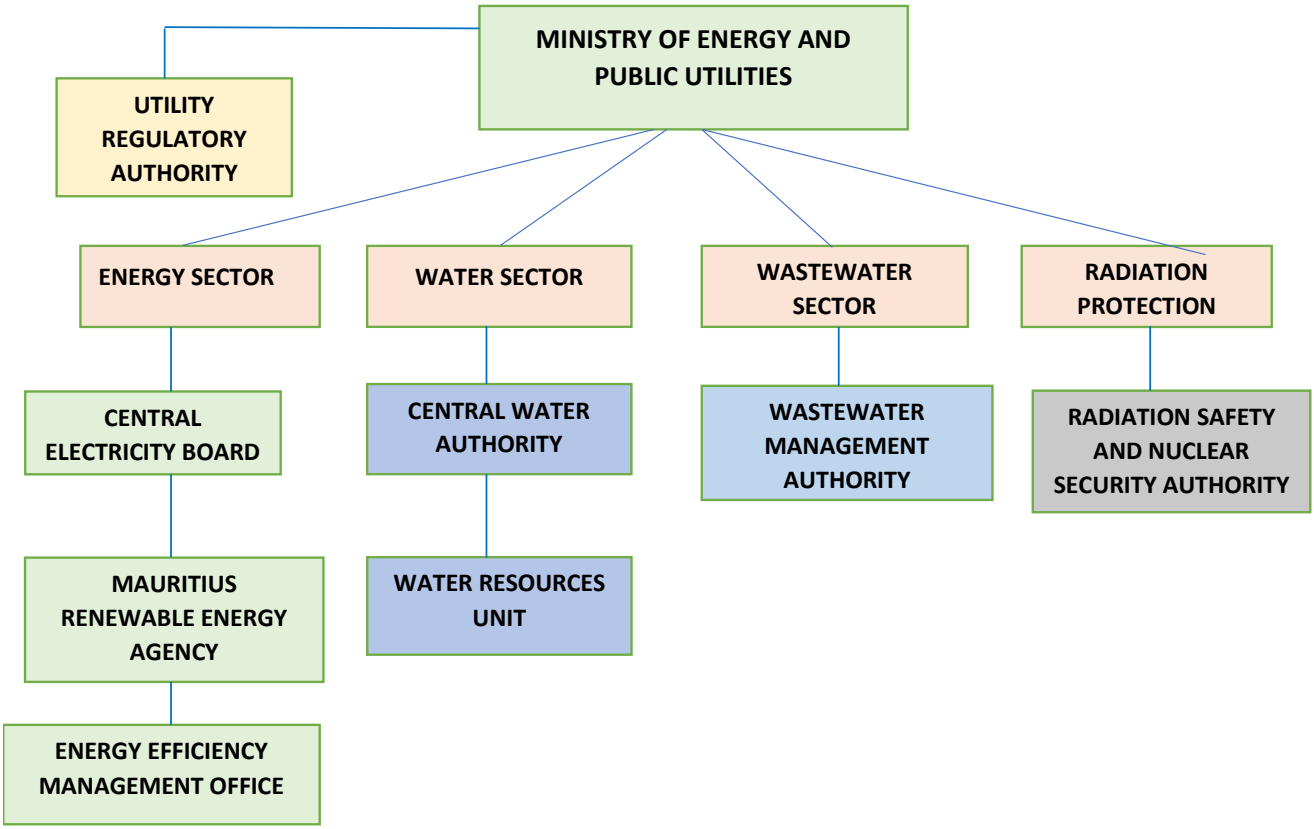
- Formulate policies and strategies for energy, water, wastewater and radiation protection
- Ensure that policies and strategies for these sectors are implemented
- Implement projects for the mobilisation of water resources such as construction of dams to meet the needs of the population
- Monitor the quality of water
- Assess water needs and determine allocation of water to different sectors and users
- Introduce legislation and implement projects to promote efficient use of energy
- Develop policies, strategies and projects for safe disposal of wastewater
- Implement policies, projects and international conventions for the peaceful and safe application of ionising radiation and nculear security in the country.

1.5 Strategy and Policy

- **Long Term Energy Strategy 2009- 2025**
- **Energy Efficiency/ Demand Side Management Master plan and Action Plan 2017**
- **Mauritius Energy Sector – Assessment of Electricity Demand Forecast and Generation Expansion Plan with Focus on 2015-17 period- World Bank 2015**
- **Master Plan for Water Resources – 2013 -2050**
- **Mauritius Wastewater Master Plan- 2014 -2033**
- **National Integrated Water Resources Management Plan – 2017**
- **Making the Right Choice for a Sustainable Energy Future: The emergence of a "Green Economy"- National Energy Commission 2013**

1.6 Units/Departments/Statutory Bodies (as at June 2019)

1.6 *Units/Departments/ Statutory Bodies (as at June 2019)*



1.6.1 The Utility Regulatory Authority (URA)

The URA is an independent regulatory body to regulate utility services, namely electricity, water and wastewater, established under the URA Act 2004. Its objects are to:

(i) ensure the sustainability and viability of utility services;

(ii) protect the interest of both existing and future customers;

(iii) promote efficiency in both operations and capital investments in respect of utility services; and

(iv) promote competition to prevent unfair and anti-competitive practices in the utility services industry.

Its functions are to -

(i) implement the policy of Government relating to applicable utility services;

(ii) grant, vary and revoke licences in respect of a utility service;

(iii) enforce the conditions laid down in an undertaking authorisation;

(iv) regulate tariffs and other charges levied by a licensee in accordance with any rules specified in the relevant Utility legislation;

(v) mediate or arbitrate disputes between a customer and a licensee, or between 2 or more licensees;

(vi) determine whether a licensee has an obligation to extend a utility service to customers or to an area not adequately supplied with such utility service;

(vii) establish an appropriate procedure for receiving and enquiring into complaints by customers in relation to any utility services;

(viii) establish and implement adequate systems for monitoring the compliance by licensees with standards and applicable regulations, and making such information publicly available;

(ix) take measures for the better protection of customers in relation to any utility services

(x) take measures to suppress any abusive, illegal or dishonourable practices in relation to any activity of a licensee

(xi) examine and make recommendations to a licensee in respect of any Power Purchase Agreement which a licensee proposes to enter into; and

(xii) examine and make recommendations to a licensee in respect of any management services contract, operation and maintenance contract or any other contract which a licensee proposes to enter into in relation to water services or waste water disposal services.

1.6.2 The Energy Efficiency Management Office (EEMO)

The EEMO was established in accordance with the Energy Efficiency Act 2011. Its objects are to promote the efficient use of energy and promote national awareness for the efficient use of energy as a means to reduce carbon emissions and protect the environment. Its functions are to –

(a) develop and implement strategies, programmes and action plans, including pilot projects, for the efficient use of energy;
(b) establish procedures to monitor energy efficiency and consumption;
(c) issue guidelines for energy efficiency and conservation in all sectors of the economy;
(d) establish energy consumption standards;
(e) collect and maintain data on energy efficiency and consumption;
(f) compile and maintain a database for energy auditors;
(g) formulate and recommend innovative financing schemes for energy efficiency projects;
(h) devise and assist in the preparation of educational courses and school curricula on the efficient use of energy;
(i) establish links with regional and international institutions and participate in programmes pertaining to the efficient use of energy;
(j) encourage and assist project developers in applying for carbon credits for energy efficiency projects using the Clean Development Mechanism;
(k) devise, in collaboration with the Mauritius Standards Bureau, the Customs Department, the Mauritius Accreditation Service and the Consumer Protection Unit, and any other relevant authorities, minimum energy performance standards regarding any equipment, machine or appliance which is imported, manufactured or sold in Mauritius;
(l) devise labelling requirements and specifications regarding any equipment, machine or appliance which is imported, manufactured or sold in Mauritius;
(m) develop criteria to classify energy consumers;
(n) prepare and submit to the Minister an annual report on energy efficiency and consumption.

1.6.3 The Mauritius Renewable Energy Agency (MARENA)

The MARENA established by the MARENA Act, 2015, has the responsibility to promote renewable energy and create an environment conducive to the development of renewable energy. Its objects are to-

(i) promote the adoption and use of renewable energy with a view to achieving sustainable development goals;
(ii) advise on possible uses of liquid natural gas;
(iii) create an enabling environment for the development of renewable energy;
(iv) increase the share of renewable energy in the national energy mix;
(v) share information and experience on renewable energy research and technology; and
(vi) foster collaboration and networking, at regional and international levels, with institutions promoting renewable energy.

1.6.4 The Central Electricity Board (CEB)

The CEB established by the Central Electricity Board Act 1963, is responsible for the control and development of electricity supplies in Mauritius. Its main function 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 build generating stations. It also collects license fees on behalf of the Mauritius Broadcasting Corporation.

As at June 2019, the CEB was producing around 40% of the country's total power requirements from its four thermal power stations and ten hydroelectric power stations listed below-

Thermal power stations	Hydropower stations	IPP's
1. St Louis Power station 2. Fort Victoria Power Station 3. Fort George Power Station 4. Nicolay Power Station	1.Champagne Power station 2.Ferney Power station 3.Tamarind falls Power station 4.Magenta Power station 5.Le Val Power station 6.Cascade Cecile Power station 7.Amode Ibrahim Atchia Power station, Reduit 8.La Ferme Power Station 9. La Nicoliere feeder canal Power station 10. Midlands Power station	1. Consolidated Energy Limited 2. Alteo Energy Ltd 3. Terragen 4. OTEOSA (ex CTDS) 5. OTEOLB (ex CTSav) 6. Sarako solar farm, Henrietta 7. Eoles de Plaines des Roches 8. Synnove Solar One L'Esperance 9. Solar Field Ltd, Mont Choisy 10. Synnove Solar One, Petite Retraite 11. Helios Beau Champ 12. Voltas Green 13. Voltas Yellow 14. Akuo Energy Medine Ltd 15. Sotravic Landfill Gas to Energy , Mare Chicose

WATER RESOURCES UNIT

1.6.5 The Water Resources Unit (WRU)

The WRU was established in May 1993 within the Ministry. Its functions are to-

- study and formulate policy in relation to the control and use of water resources;
- keep a data base of water resources;
- prepare and follow up plans for the conservation, utilisation, control and development of water resources;
- co-ordinate and scrutinise the projects undertaken by any person relating to the conservation, utilisation and development of water resources and to assess the technical possibilities, benefits and socio-economic feasibility of the project;
- conduct and co-ordinate research and investigation on the economic use of water;
- promote, design and construct, in consultation with appropriate authorities, schemes and works for the purpose of conservation and development of water resources;
- ensure that water supply conforms with such standards as are laid by law;
- monitor the construction of major dam projects;
- ensure the regular maintenance of the dams; and
- implement integrated water resources management.

CENTRAL WATER AUTHORITY

Central Water Authority

1.6.6 The Central Water Authority (CWA)

The CWA established by the Central Water Authority Act 1971, is responsible for the treatment and distribution of water for domestic, industrial and commercial purposes throughout Mauritius. As at June 2017, it was ensuring water supply to the population through six water supply zones, 4276 kilometres of water pipes, 97 service reservoirs, 7 water treatment plants.

Wastewater Management Authority

Wastewater Management Authority

WASTEWATER MANAGEMENT AUTHORITY

1.6.7 The Wastewater Management Authority (WMA)

The WMA was established in 2001, after the enactment of the Wastewater Management Authority Act 2000. The core services of the WMA are the collection and treatment of domestic, commercial and industrial wastewaters for disposal to an environmentally acceptable quality. As at July 2017, the WMA was operating 72 pumping stations and 10 treatment plants, including four main ones at St Martin, Grand-Baie, Baie-du-Tombeau, and Montagne Jacquot.

RADIATION SAFETY AND NUCLEAR SECURITY AUTHORITY

1.6.8 The Radiation Safety and Nuclear Security Authority (RSNSA)

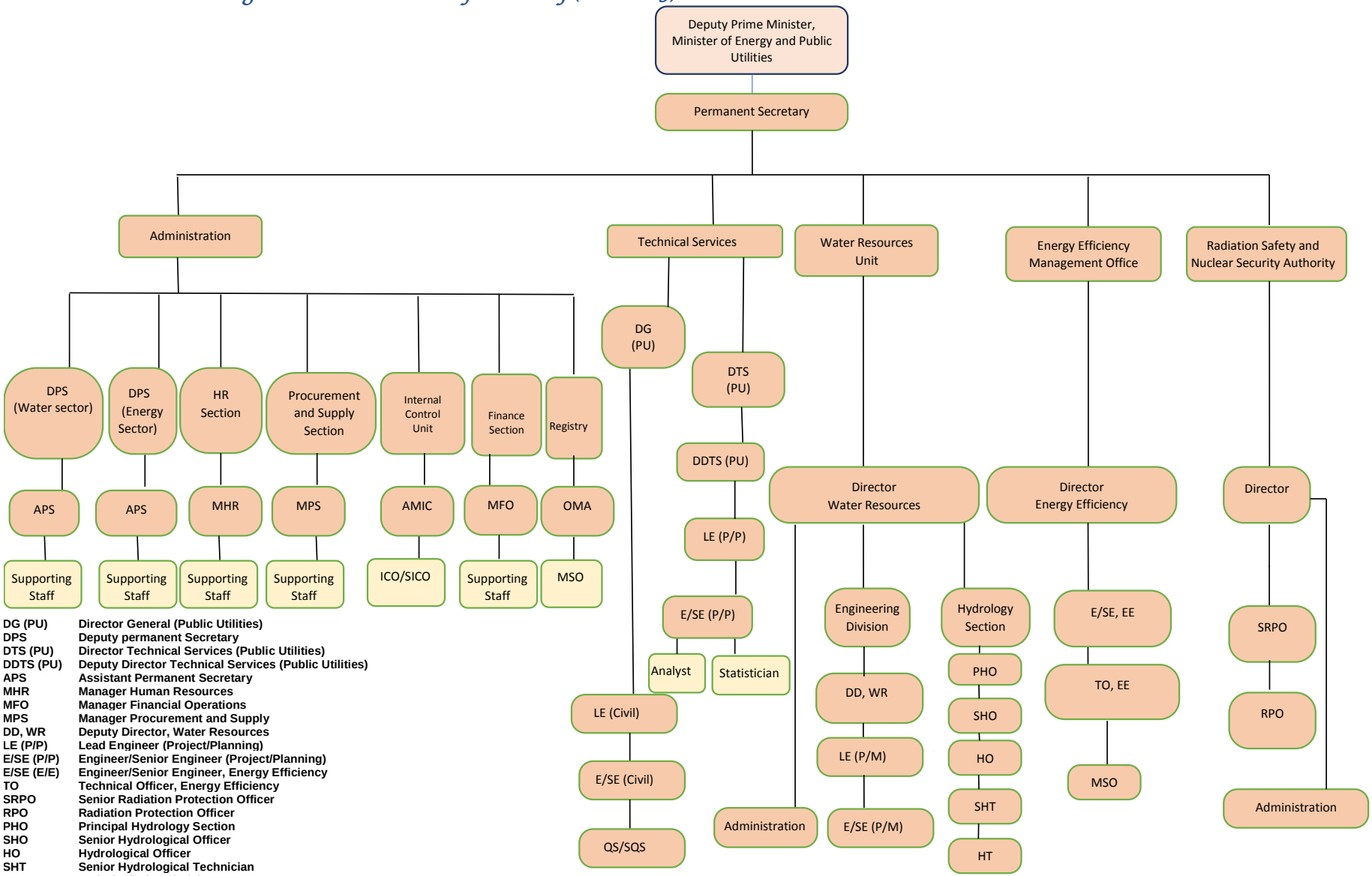
The RSNSA is the national regulatory body, established under the Radiation Safety and Nuclear Security Authority Act of 2018 to regulate radiation safety and nuclear security. It has replaced the Radiation Protection Authority.

1.7 Main Legislation

ENERGY SECTOR	WATER AND WASTEWATER SECTORS	RADIATION PROTECTION
Central Electricity Board Act 1963	Central Water Authority Act 1971	Radiation Safety and Nuclear Security Act 2018
Electricity Act 1939	Ground Water Act 1969	Radiation Protection(Personal Radiation Monitoring Service) Regulations 2012
Electricity Act 2005 (not yet proclaimed)	Rivers and Canals Act 1863	Radiation Protection (Safe Transport of Radioactive Material) Regulations 2016
Electricity Regulations 1939	The Wastewater Management Authority Act 2000	Radiation Protection (Licensing and Registration) Regulations 2017
Energy Efficiency Act 2011	The Environment Protection (Drinking Standards) Regulations 1996	The Radiation Safety and Nuclear Security (Appeal) Regulations 2019
Energy Efficiency (Labelling of Regulated Machinery) Regulations 2016		
Energy Efficiency (Registration of Auditors) Regulations 2016		
Energy Efficiency(Energy Consumer and Energy Audit) Regulations 2017		
Mauritius Renewable Energy Agency Act 2015		
Utility Regulatory Authority Act 2004		

1.8 OUR PEOPLE - Organisation Structure of Ministry

1.8 *Organisation Structure of Ministry (2018-2019)*



DG (PU)	**Director General (Public Utilities)**
DPS	**Deputy permanent Secretary**
DTS (PU)	**Director Technical Services (Public Utilities)**
DDTS (PU)	**Deputy Director Technical Services (Public Utilities)**
APS	**Assistant Permanent Secretary**
MHR	**Manager Human Resources**
MFO	**Manager Financial Operations**
MPS	**Manager Procurement and Supply**
DD, WR	**Deputy Director, Water Resources**
LE (P/P)	**Lead Engineer (Project/Planning)**
E/SE (P/P)	**Engineer/Senior Engineer (Project/Planning)**
E/SE (E/E)	**Engineer/Senior Engineer, Energy Efficiency**
TO	**Technical Officer, Energy Efficiency**
SRPO	**Senior Radiation Protection Officer**
RPO	**Radiation Protection Officer**
PHO	**Principal Hydrology Section**
SHO	**Senior Hydrological Officer**
HO	**Hydrological Officer**
SHT	**Senior Hydrological Technician**
HT	**Hydrological Technician**
AMIC	**Assistant Manager, Internal Control**
LE (P/M)	**Lead Engineer, (Planning/Maintenance)**
E/SE (P/M)	**Engineer, Senior Engineer (Planning/Maintenance)**
LE (Civil)	**Engineer, Senior Engineer (Civil)**
E/SE (Civil)	**Engineer, Senior Engineer (Civil)**
QS/SQS	**Quantity Surveyor/Senior Quantity Surveyor**

1.8.1 Staffing as at 30 June 2019

Grade	Number
Administrative cadre	5
Professional /technical cadre	65
Pre-registration Trainee Engineer	2
HR Cadre	3
Finance cadre	8
Procurement and Supply	5
Internal Control	2
Secretarial	15
General Services	35
Workmen's class	42
Officer from CISD	1
Safety And Health officer	1
Total	**184**

1.8.2 Vacancies filled

14 vacancies were filled through recruitment by the Public Service Commission, 6 through delegated authority by the Ministry. 4 vacancies were filled through posting of officers by the Ministry of Civil Service and Administrative Reforms and 3 through the Ministry of Finance and Economic Development.

1.8.3 Retirement

4 employees from the Administrative cadre, General Service cadre and workmen's cadre retired.

1.8.4 Training

53 officers attended training overseas and 107 attended training locally.

1.8.5 Schemes of Service prescribed

The scheme of service of Radiation Protection Officer was prescribed on 18 December 2018.

1.8.6 Other

31 employees took their passage benefits and 2 made requests for leave without pay.

1.8.7 Staffing – Statutory Bodies as at 30 June 2019

	CWA	WMA	CEB	MARENA	URA
Employees	1223	458	2120	7	12
Trainees	103	19	152	2	
Retired	46	4	74		

PART II – ACHIEVEMENTS AND CHALLENGES JULY 2018-JUNE 2019

UTILITY REGULATORY AUTHORITY

The Utility Regulatory Authority –

- appointed Mrs Eunice Harris Potani from Malawi as CEO 1 May 2019 in replacement of Mr. Alfred Bygiero;
- obtained the assistance of the African Legal Support Facility, through the African Development Bank for the preparation of its strategic plan. The consultant conducted in-house training for URA staff and Board members in July 2018;
- organized a high-level seminar for 60 participants from the public sector and the Independent Power Producers and a workshop for senior managers on electricity regulation from 16 to 18 August 2018 ;
- obtained observer status of the Regional Electricity Regulators Association (RERA) in July 2018. It joined the Network of Energy Regulators for French-speaking countries (RegulaE.Fr), which has 25 members from Europe, North America, West Africa and Caribbean.

ENERGY EFFICIENCY MANAGEMENT OFFICE

❖ Sectorial Energy Consumption – Survey in Industrial and SME Sector, Transport

The Ministry awarded a contract in November 2017 to Straconsult Ltd for the sum of Rs 1,887,600 to carry out a survey of energy use and energy efficiency in the SME, Industrial and transport sectors. The survey was completed in February 2019.

On 24 January 2019, Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities opened a Workshop during which the findings of the study for the industrial and SME sectors were presented to stakeholders.

❖ Sectorial Energy Consumption – Survey in Services Sector

In November 2018, the Ministry awarded a contract for a survey on energy use in the Services sector to Verde Frontier Solution Ltd for the sum of Rs 1,104. 000. The consultant has submitted the draft final report to EEMO.

❖ Public Lighting

In 2018, the Ministry had appointed a consultant to prepare standards for public lighting which included an assessment of the suitability of LED lighting systems in real conditions. The testing was carried out as from September 2018 for 4 months at 4 different sites and showed that the lighting systems performed suitably as designed.

❖ Awareness campaign and sensitisation on energy efficiency

The EEMO carried out talks for 1000 children in 15 primary schools and about 1200 persons in 60 social welfare and community centres.

It organized energy efficiency competitions for Primary and Secondary Students. A prize giving ceremony was held on 23 May 2019 in the presence of the Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities.

Prize award ceremony -23 May 2019

❖ Mandatory Energy audits

In September 2018, the Energy Efficiency (Energy Consumer and Energy Audit) Regulations 2017 was amended in order to extend mandatory energy audits to government owned/controlled, local authorities and statutory bodies as from January 2019 and the private sector as from January 2021.

The EEMO issued 20 notifications for mandatory energy audits and carried out audits in 18 Government Buildings listed below:

Mauritius Maritime Training Academy	Mediclinic Lady Sushil Ramgoolam, Belvedere	Bambous District Council
Montagne Longue Hospital	Sookdeo Bissoondoyal State College	Mediclinic L'Escalier
Meteorological Services Department	Municipality of Vacoas Phoenix	Public Service Commission
Yves Cantin Hospital	Moka Eye Hospital	Barkly Agriculture station
Municipality of Curepipe (including Hotel de Ville and Carnegie Library)	National Environmental Laboratory building	District Council Riviere du Rempart
Petit Verger Prison	GRNW Prison	Richelieu Open prison

❖ Energy Efficiency labelling

More than 15 importers were using the online registration system set up by the EEMO. More than 550 applications for registration were received and about 350 certificates of registration issued.

ELECTRICITY

❖ Electricity generation

In 2018, around 79.3% of the electricity was generated from non-renewable sources, mainly coal and fuel oil while the remaining 20.7% were from renewable sources, mostly bagasse. The main energy source for electricity generation was coal (40.2%), followed by diesel and fuel (39%) and renewable sources (20.7%). In 2018, coal (51.7%) was the major fuel used to produce electricity followed by fuel oil (28.6%) and bagasse (19.5%). Independent Power Producers produced around 56.9% of the total electricity. The peak power demand was 468 MW in 2016. *(Source: Statistics Mauritius)*.

❖ HFO Pipeline from MCIA Quay to Fort William

The construction of a a new pipeline for the transfer of Heavy Fuel Oil (HFO) from MCIA Quay to Fort William and Les Grandes Salines Tank Farms started in November 2017 and was completed in November 2018 at the cost of MUR 31.12 M. The pipeline will also serve as bunkering facility for sending HFO to CEB power stations in Rodrigues.

❖ Construction of a new 6500 m^3 HFO Tank at Fort Victoria Power Station

The construction of a new 6500 m3 HFO Tank and interconnecting pipe network at Fort Victoria Power Station started in February 2018 and was completed in March 2019. The cost is MUR 70.18 M. This tank has increased storage capacity of heavy fuel oil for use at both Fort Victoria and Saint Louis power stations.

❖ Setting up of Combined-Cycle Gas Turbine (CCGT) Power Plant at Fort George

The project consists of the setting up of a 105-120 MW Combined-Cycle Gas Turbine (CCGT) Power Plant at Fort George. The first phase of the project will comprise the setting up two open cycle gas turbines and will switch over to natural gas. The Central Procurement Board approved the award of the contract to Mythilineos Holdings S.A. On 22 November 2018, the CEB issued a Notification of Award to the successful bidder.

❖ Transmission and Distribution network

The CEB completed undergrounding of part of the existing 132 kV St Louis - Ebène network at Plaine Lauzun in December 2018 and carried out undergrounding works on feeders at Case Noyale and Jin Fei. It carried out exhaustive works, consisting of replacement of all rotten bolts and corroded fittings as well as corrosion treatment/painting, on the following networks: Champagne – Wooton, FUEL-Champagne; Belle Vue - Dumas - Completed and Belle Vue-Amaury.

❖ Smart Metering

Around 20,000 AMR meters are being remotely accessed and they account for nearly 50% of CEB's total revenue. CEB was implementing extension of Smart Metering project to some 40,000 small commercial and Industrial consumers. The investment during the financial year 2018/2019 stood at Rs 61.2 Million.

RENEWABLE ENERGY

❖ Solar PV Farms

During the period 2018/2019, five new solar farms became operational, bringing the total number of solar farms in Mauritius to nine. The new farms are as follows –

DATE OF OPERATION	SOLAR FARM	PROMOTER	CAPACITY MW
December 2018	Helios Beau Champ solar farm	Quadran/Alteo	10.3
December 2018	Voltas Green solar farm – Queen Victoria	Joonas/ Voltas Green Ltd	15.051
December 2018	Voltas Yellow solar farm Solitude	Joonas/ Voltas Yellow Ltd	16.344
April 2019	Henrietta PV Farm 2	CEB (Green Energy) Co Ltd	2
April 2019	Henrietta PV farm – Medine	Akuo Energy (Mauritius) Ltd/Medine Ltd	17.544
Total			**61.239**

Akuo Solar farm Henrietta

❖ Two Additional Utility Scale PV Farms

Two solar PV farms, namely SPV Petite Rivière (5MW) and Synnove Petite Retraite (8.6 MW) were under construction.

❖ Setting up of a 2MW PV Farm in Henrietta

CEB (Green Energy) Co. Ltd invested Rs 75 million in the construction of a 2 MW solar farm at Henrietta, which was commissioned in April 2019.

❖ SSDG Scheme

In May 2019, the CEB launched a new SSDG scheme based on net billing for a maximum of 5 MW targeting 2500 households with a consumption of 100 units per month. Depending on their electricity consumption, the beneficiaries will thus be able to reduce their electricity bills over a period of 20 years. The project will be implemented over a period of 3 years.

Solar system on CWA building

❖ Medium-Scale Distributed Generation (MSDG) Net-Metering Scheme I

The CEB launched the MSDG Net-Metering Scheme, Phase 1 in May 2016. Under this Scheme, a total cumulative capacity of 10 MW distributed generation will be integrated into the CEB grid. Some 85 applications were received for the total aggregated capacity of 10 MW. As at April 2019, around 50% of the allowed capacities had been integrated into the grid.

❖ New Pilot 4 MW Renewable Energy Scheme for Small Commercial Businesses

The CEB (Green Energy) Co Ltd launched a 4 MW Green Energy Scheme for small commercial businesses in 2017. In the pilot phase some 2000 electricity customers in the 215 tariff category are eligible to benefit from this project. The full investment cost of the project, estimated at some Rs 280 million, will be borne by the CEB. Commissioning of around 280 kits out of the first 1000 was completed.

❖ Home Solar Project – Signing of Agreement at Abu Dhabi

The Abu Dhabi Fund for Development granted a USD 10 million loan to the Central Electricity Board (CEB) for the implementation of the Home Solar Project. The project was selected in January 2018 by the IRENA/Abu Dhabi Fund for Development from 86 entries, after rigorous selection by an international panel of experts. It consists in the installation of 10,000 solar kits to be installed on the homes of low-income families.

Signing Ceremony at IRENA Annual Assembly

The loan agreement was signed on 12 January 2019 in Abu Dhabi by Mr. Mootoosamy Naidoo, Chairperson, CEB and Mr. Mohammed Saif Al Suwaidi, General Manager, Abu Dhabi Development Fund. Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister and Minister of Energy and Public Utilities, and Mr Adnan Amin , Director General of the IRENA were present at the signing ceremony .

❖ Handing over of Certificates – Home Solar project

The CEB has already installed solar kits on houses of 1,000 families. On 14 November 2018, Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister and Minister of Energy and Public Utilities handed over Home Solar Project Certificates to 17 beneficiaries at the Trochetia Municipal Centre in Trèfles.

Home solar project in Mauritius and Rodrigues

❖ Battery Energy Storage Systems

The CEB has installed two battery storage systems of 2 MW each at Amaury and Henrietta. On 25 October 2018, Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities inaugurated the new battery storage system at Amaury in the presence of the UNDP representative, Mrs Christine Umutoni.

Inauguration of Battery Storage Amaury

CEB invited tenders on 10 January 2019 for the procurement of 14 MW Battery Energy Storage Systems and on 25 February 2019, it invited tenders for battery storage of 1.5 MW in Rodrigues.

❖ Green Climate Fund (GCF) Grant – Credit Facility Agreement between CEB and AFD

In December 2016, the Green Climate Fund (GCF) approved a grant of USD 28.2 million for the project "Accelerating the Transformational Shift to a Low-Carbon Economy in the Republic of Mauritius". This grant of around Rs 1 billion, which has been complemented with debt financing of USD 18.7 million secured by CEB from Agence Française de Développement (AFD), will be used to finance the strengthening of CEB's grid in order to integrate more intermittent renewable energy.

On 29 November 2018, the Director of AFD, Mr André Pouillès-Duplaix and the Chairman of the CEB, Mr Mootoosamy Naidoo signed a Credit Facility Agreement in the presence of Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities and H.E Mr Emmanuel Cohet, French Ambassador.

❖ National Scheme for Innovative/Emerging Technologies

The CEB, with the support of MARENA and MRC, approved a special scheme for emerging and promising renewable energy technologies. A Call for Proposal for this innovative scheme was officially launched on 8 June 2019 and the closing date to submit proposals was 28 August 2019.

❖ Seminar on Regulatory Framework for Bioelectricity

In 2017, a Convention was signed by the Ministry and AFD for support of Rs 4 million under the "Fonds d'Expertise Technique et d'Echanges d'Expériences" (FEXTE) to develop a biomass policy. Within this project, biomass resources in Mauritius have been mapped and an AFD Consultant is now developing the institutional, legal and financial instruments for a biomass policy, which will support sugar cane planters and other potential biomass resources. The AFD Consultant is expected to finalise the report by November 2019.

A seminar on the regulatory framework for bioelectricity was held on 5 and 6 July 2018 with about 50 participants from the public and private sectors of Mauritius and Reunion.

❖ Workshop on Smart Grid Roadmap

Under the GEF/ UNDP-supported project, a Smart Grid Roadmap for Mauritius was developed by the consultancy firm ESTA LLC from USA. The Roadmap will serve as a blueprint to guide the Central Electricity Board in terms of integrating specific technologies into the CEB power system. On 13 December, 2018, a Workshop on the Smart Grid Roadmap was held.

❖ Workshop on Review of SSDG schemes and assess the solar PV market status

Under the GEF/ UNDP-supported project, firm Deloitte was appointed to carry out a review of SSDG schemes and assess the solar PV market status in Mauritius and Rodrigues. The aim of this assignment was to learn about solar PV evolution in the local market and chart its development. A validation workshop on the market evaluation of the Small Scale Distributed Generation-SSDG project was held on 23 and 24 August 2018.

National Grid Code for Mauritius

On 9 May 2019, an Inception Workshop on the Establishment of a National Grid Code and Development of Standards, Funding and Incentive Strategy for Renewable Energy projects in Mauritius was opened. It was organised by the Mauritius Renewable Energy Agency under the UNDP-Green Climate Fund (GCF) project on 'Accelerating the transformational shift to a low carbon economy in the Republic of Mauritius'.

❖ Workshop on the RE-SAT energy analytics

On 17 January, 2019, a two-day workshop focusing on the RE-SAT energy analytics platform in Mauritius was opened. RE-SAT is a project funded by the UK-Space Agency and led by the Institute for Environment Analytics of the University of Reading in six Small Islands Developing States (SIDS), including Mauritius. The aim is to use earth observation and other data sources to support SIDS in their transition from fossil fuel electricity generation to renewables by implementing the energy planning platform – RE-SAT.

SOCIAL MEASURES

- Some 70,000 customers whose average monthly consumption does not exceed 85 kWh benefitted from concessional electricity rates under the Social tariff 110 A.

- 1000 photovoltaic solar kits were installed on houses of low income households. The selected customers will benefit from 50 kWh of electricity, produced from the solar photovoltaic kit, free of charge each month over a period of 20 years.

RADIATION SAFETY AND NUCLEAR SECURITY

- **The Radiation Safety and Nuclear Security Act** was voted in the National Assembly in November 2018. It replaced the Radiation Protection Act of 2003. The Act provides for regulation and control of all radiation sources and practices for the adequate protection of people and the environment, both now and in the future, against the harmful effects of ionising radiation. It binds the State and provides an enhanced legislative framework that will respond effectively to technological and scientific changes. It provides for nuclear security and safeguards. The new legislation domesticated 8 Conventions of the International Atomic Energy Agency, namely:

    - Vienna Convention on Civil Liability for Nuclear Damage
    - Convention on Supplementary Compensation for Nuclear Damage
    - Convention on the Physical Protection of Nuclear Material
    - Amendment to the Convention on the Physical Protection of Nuclear Material
    - Convention on Early Notification of a Nuclear Accident
    - Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency
    - Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management
    - African Nuclear-Weapon-Free Zone Treaty

- **The Radiation Safety and Nuclear Security (Appeal) Regulations**, under the Radiation Safety and Nuclear Security Act became effective as from 19 March 2019. It provides that any person who feels aggrieved with the decision of the Radiation Safety and Nuclear Security Authority can make an appeal.

- The construction of a **Centralised Radiological Source Storage Facility**, financed by the US Department of Energy, through its Global Threat Reduction Initiative Programme, started. The construction of the facility will cost around Rs. 10 M.

- The construction of a new building to house the office of the Radiation Safety and Nuclear Security Authority started in May 2018 at Helvetia. This project will cost around Rs. 25 M. The completion date was originally May 2019 and was extended to November 2019.

WATER SECTOR

There are five main aquifers in Mauritius comprising 429 boreholes - 133 domestic (90%), 157 irrigation (5%), 139 industrial (5%). The mean percentage of water level for all reservoirs varied from 55% to 96% in 2018. The total volume of water treated went up by 9.2% and was 285 Mm3. The average production from surface water was 51.8% and boreholes 48.2%. The total volume of water sold increased from 120 Mm3 to 123 Mm3 in 2018. The consumption per capita per day was 243 m3 and for potable water it was 186 m3. (*Source Statistics Mauritius*)

The main reservoirs are:

Mare aux Vacoas, located in Plaines Wilhems, is the largest reservoir in Mauritius. It has a capacity of 25.89 million cubic metres and provides water to the Upper Plaines Wilhems and to Moka.

La Nicolière Reservoir, constructed in the year 1929 supplies water for domestic, industrial and irrigation purposes to the northern districts and part of Port Louis. The reservoir has a capacity of 5.26 Mm3 .

Piton du Milieu reservoir is in Moka district. It was constructed in 1952. It has a capacity of 2.99 Mm3. It provides water to the Eastern region.

La Ferme Reservoir located near Bambous village, was constructed in 1914. The capacity is 11.52 Mm3. It is used only for irrigation.

Midlands dam became operational in December 2002. It has a capacity of 25.5 Mm3. It is used for potable water supply and irrigation and supplements water at Nicoliere reservoir.

Bagatelle dam
The Bagatelle Dam located in Plaine Wilhems, has a storage capacity of 14 million cubic metres The construction started in 2012 and was completed in June 2017.

Mare Longue Reservoir, constructed in the year 1948 in Plaines Wilhems, has a storage capacity of 6.28 Mm^3.

❖ Dam Break Analysis

The contract for consultancy services for the dam break analysis at Mare-aux-Vacoas, Midlands, La Ferme, Mare-Longue and Piton du Milieu was awarded in May 2018 to M/s Studio Pietrangeli. The study started in August 2018.

❖ Enlargement of La Nicoliere dam (Study)

The Consultancy Contract for the Enlargement of the La Nicoliere Dam was awarded in May 2017 to M/s SMEC International was on-going. A Contract for Geological/Geotechnical Investigation was awarded in January 2019.

❖ Riviere-des-Anguilles Dam Project

The contract for the Consultancy services for the design review was awarded in October 2017. The Design Review exercise was on-going. The Detailed Design of the dam is expected by April 2020.

On 27 February 2019, a contract for Geophysical Investigations was awarded to Georisorse Italia di G. Censini & C. s.a.s, for the amount of Rs 12 Million, including VAT. The expected completion date was September 2019.

The Ministry awarded a contract for Geological/Geotechnical Investigations to Water Research Co Ltd on 11 April 2019 for the amount of MUR 14,110,281.50 (Incl. VAT). The investigations started on 03 June and will be completed by January 2020.

❖ Solar powered LED lighting at Bagatelle Dam

A project for the installation of LED lighting at Bagatelle dam started in March 2019. It is due to be completed in October 2019.

❖ World Bank Support to Water Resources Unit

The World Bank fielded a technical mission to Mauritius from 22 to 26 October 2018 to advise on national water resources management planning and share lessons on international best practices for water resources management. In particular, the mission focused on the water legislation and advised on the organogram of the water resources unit and training needs and identifying capacity strengthening programmes.

❖ Water tank grant

The income ceiling for eligibility to the water tank grant of Rs 5,000 was raised from Rs 25,000 to Rs 30,000 as from 1 July 2019. 8543 applications were processed and Rs 52 Million disbursed during financial year 2018/19.

❖ New Boreholes

To cater for future demand and to improve water supply, the Water Resources Unit (WRU) drilled and handed over to the CWA three new boreholes, namely at Telfair, Beau Songes and Bonne Mère.

❖ Replacement of pipes July 2018 to June 2019

CWA completed seven projects and replaced 55.15 kilometres of pipes at the cost of Rs 574 Million as follows-

	Completed	Length of pipeline (km)
Residence Kennedy-Candos	2018	6.5
Pumping main from Alma Reservoir to Alma Hill Reservoir	2018	1.8
Surinam	2018	6
Riche en Eau to Grand Bel Air and Ville Noire	2019	11.3
Morcellement Swan Pereybere	2019	13
Renewal of Service Main from Rose-Belle to Mont Fertile	2019	7.2
Construction of Pipeline from Bagatelle WTP to Soreze	2018	9.35

Visit to Pipe laying works in Berthaud

- CWA awarded six contracts for replacement of 26 kms of pipes for the amount of Rs 325 million as follows –

Contract Description	Year Started	Year Completed	Pipeline as per Contract (Km)
Pipeline from Montagne Fayence to Ecroignard	2018	2020	12.15
New Intake along La Flora River and Associated Pipeline	2018	2019	1.5
Renewal of Pipeline along Belle- Rose Avenue, Quatre Bornes	2019	2019	1.5
Renewal of service main from Malakoff to Trois Boutiques and adjoingning areas.	2019	2020	4.7
Pipelaying works from Salazie to Les Mariannes	2019	2020	5
Pipelaying work from Bagatelle WTP to River Terre Rouge	2019	2019	0.8

❖ Mobile Filtration Plants

CWA installed 10 mobile filtration plants of 2000 m3 daily at the following sites:

Pont Lardier	May-19
New Goodlands	May-19
Rouillard	Jun-19
Plaines des Papayes 1	Jun-19
Plaines des Papayes 2	Jun-19
La Marie 1	Jul-18
La Marie 2	Jul-18
Balisson	Jul-18
Riviere du Poste	Jul-18
Mexico	Jul-18

❖ Duplicate boreholes

3 duplicate boreholes were drilled at the cost of Rs 2.7 million at Old Yemen, New Yemen and Belle Rose.

❖ Pumping station Plaine Lauzun

A new pumping station was constructed at Plaine Lauzun and became operational on 12 November 2018. It is used to pump water to regions of Carreau Lalo, Ste Croix, Roche Bois, Cité Martial, Camp Yoloff, Vallée Pitot and Tranquebar.

❖ Water Treatment Plants

The construction of Bagatelle Water Treatment Plant was in progress. The CWA awarded contracts for consultancy services for the upgrading of Mont Blanc Treatment plant and Piton Du Milieu Treatment plant.

❖ Service Reservoirs

The construction of 2 service reservoirs was completed as follows –

- a 2,000 m3 service reservoir at Balisson at the cost of Rs 27 million
- a 3,000 m3 service reservoir at L'Amitie, Riviere du Rempart

Contracts were awarded by CWA for the construction of new service reservoirs at Montagne Fayence and Riviere Dragon.

❖ New tariff for swimming pools

Following the announcement in the budget 2018/19 that domestic customers who have a swimming pool will have to pay a fixed additional monthly charge of Rs 500 if their monthly water consumption exceeds 50 cubic meters., the CWA applied the new tariff for swimming pools to 366 customers as from May 2019.

❖ World Water Day 2019

The World Water Day 2019 was on the theme 'Leaving No One Behind'. The CWA organized an exhibition and a half day conference on 19 March 2019 at Ebene.

Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities and the Minister of Education and Human Resources, Tertiary Education and Scientific Research, Hon Mrs Leela Devi Dookun-Luchoomun, the Minister of Tourism, Hon Anil Gayan, and other personalities were present.

❖ Social measures - 6 m³ free of charge

As from 2015, an average of 59,610 subscribers who consume up to 6m³ of water do not pay water charges.

WASTEWATER SECTOR

❖ The following projects were completed in the year 2018/19-

Projects	Scope of Works	Contract value (MUR)	Completion Date
Kensington Sewerage Project	1.5 km of sewer, 1 pumping station and 122 household connections	73.9 M	September 2018
Rehabilitation of wastewater infrastructure at Cité Paul & Virginie, Port Louis	1.175 km of sewer, replacement of 460 metres of CWA pipes and 134 household connections	58 M	May 2019

❖ Projects in progress were as follows –

Projects	Scope of Works	Contract value (MUR)	Completion Date
Tranquebar/Vallée des Prêtres Sewerage Project	Laying of pipes, replacement of 1.3 km of CWA pipes and 30 households connections	74.61 M	June 2019
Highlands Sewerage Project	2.4km of sewer pipes and 200 house connections	155.44 M	July 2019
Upgrading of sewer from Junction St Paul Road and J. Nehru to Junction J. Nehru and Edgar Quirin Road – Phase I	Upgrading of 500 m of existing parallel sewer line and 45 house connections	27 M	July 2019
Sadally Sewerage Project	460 metres of sewer pipes and 60 house connections	15.1 M	October 2019
Rehabilitation works @ Volcy Pougnet (Raoul Rivet)	Rehabilitation an existing 225mm diameter sewer line	27.48 M	December 2019
Rehabilitation of wastewater infrastructure at Cité Malherbes, Curepipe	800 metres of sewer pipes, replacement of 700 metres of CWA pipes and rehabilitation of wastewater infrastructure in 220 housing units	53.9 M	May 2020
TOTAL		353.53 M	

❖ Pailles Guibies Sewerage Project Phase 1

The Pailles Guibies Sewerage Project Phase 1 consists of the construction of 3.35 kms trunk sewer and construction of a pumping station at Grand River North West. Works started on 05 November 2015 and were completed on 28 June 2018, without cost overrun.

❖ New Sewerage Pumping station - Pailles

Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities inaugurated the Pailles Guibies Sewerage Pumping station at Grand River North West.

Visit to Pumping station Pailles

❖ Framework Agreement for House Connections and Sewer extension

Since August 2016, the WMA Board has started carrying out house connections under a Framework Agreement which has shortened the timeframe for house connections **from 9 months to one month.** **1,347 houses** have been connected under the Framework Agreement.

A new Framework Agreement in respect of Sewer Extension Works and Sewer Maintenance Works was awarded in August 2017 with a view to connecting more houses through extension of sewer networks and to solve nuisance problems more rapidly. 311 repair works have been effected and 49 extension works have been carried out.

❖ Reuse of Treated Wastewater

The WMA supplied 4.2 million M3 of treated effluent from St Martin Wastewater Treatment Plant for sugarcane irrigation and 777,750 m3 treated effluent to Compagnie de Mont Choisy Ltée.

❖ Acquisition of Jetting Unit

The WMA acquired two additional trucks mounted sewer jetting unit on 28 September 2018 with the aim of improving service delivery.

INTERNATIONAL/REGIONAL COOPERATION

❖ Participation in 9th Assembly of International Renewable Energy agency – January 2019

Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities attended the 9th Assembly of IRENA held in Abu Dhabi from 11 to 13 January 2019 together with officials from the Ministry and CEB.

One key event during the Assembly was the signing on 12 January 2019 of a loan agreement for the grant of 10 million USD to implement the Home Solar project by the Chairperson of the CEB, Mr Mootoosamy Naidoo and the Director General of the Abu Dhabi Fund for Development, Mr Mohammed Saif Al Suwaidi.

Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities also attended a Ministerial meeting on Scaling up renewable energy in Africa, where he was invited to make a statement. He explained that the Mauritian Government has taken bold measures to create an enabling investment climate and has encouraged transparent procurement procedures for selection of renewable energy projects.

❖ Ministerial Meeting of International Solar Alliance – January 2019

On 14 January 2019, Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities attended a Ministerial meeting of the International Solar Alliance in Abu Dhabi, chaired by H.E. Raj Kumar Singh Minister of State, Power & New and Renewable Energy of India. He made a statement on the various incentives provided by Government to encourage investment in solar energy.

❖ First Assembly of International Solar Alliance – October 2018

Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities accompanied by officials from his Ministry and the Mauritius High Commission in Delhi participated in the First Assembly of the International Solar Alliance (ISA) and the Second Meeting of Ministers of Energy of the Indian Ocean Rim Association (IORA) in India from 1 to 4 October 2018. The main decisions taken at the Assembly of the International Solar Alliance were, among others, - (a) an amendment of the Framework Agreement of ISA to extend membership of the Alliance to all UN Member states; (b) the appointment of Mr Devendra Tripathy as Director General of the Alliance; and (c) the grant of partner country status to Lesotho, Spain, Tunisia and Tajikistan and partner organisation status to the European Bank of Reconstruction and Development, the African Development Bank, the Asian Development Bank, the New Development Bank, the Green Climate Fund, World Bank and European Investment Bank.

❖ Second Meeting of Ministers of Energy of Indian Ocean Rom Association – October 2018

Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities attended the Second Meeting of Ministers of Energy of Indian Ocean Rim Association (IORA) , which adopted a Delhi Declaration, taking the commitment that IORA would be guided by the various principles, including – (a) collaboration among IORA members in meeting the growing demand for renewable energy; (b) development of a common renewable energy agenda; (c) promoting regional capacity building and technology development and transfer; (d) strengthening Public Private Sector Partnerships to further renewable energy development in the region; and (e) promotion of sustainable tourism through application of renewable energy technologies to the tourism industry.

❖ Participation in Australia-Africa Week, Perth, August 2018

Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities attended the Australia-Africa Week in Perth from 26 to 29 August 2018, which is held annually to promote and advance Australia-Africa relations. It encompasses a range of activities linking universities, business groups, diaspora communities and African ministers and senior officials. The main events are the Australia-Africa Universities Network Forum, the Africa Down Under Conference, the Australia-Africa Trade, Investment and Cultural Expo and the Women in Leadership Forum . He also met the Mauritian Diaspora living in Perth and Canberra.

❖ Regional meeting on LNG, Mahé, Seychelles – October 2018

Following an invitation from the Government of Seychelles, Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities attended a High Level Meeting to Mahé, from 11 to 12 October 2018, accompanied by the Hon Nandcoomar Bodha, Minister of Public Infrastructure and Land Transport and the Hon Ashit Kumar Gungah, Minister of Industry, Commerce and Consumer Protection. The other members of the delegation were from the Ministry of Public Infrastructure and Land Transport, the Central Electricity Board, the State Trading Corporation and the Ministry of Energy and Public Utilities.

The aim of the High Level Meeting was to develop a common strategy for the importation of LNG for electricity generation and benefit from economies of scale. Representatives of Madagascar, Comoros, the African Development Bank, the Indian Ocean Commission and private sector also attended the High Level meeting.

❖ Petrotech- February 2019

Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister and Minister of Energy and Utilities participated in the PetroTech 2019 conference from 10 to 12 February 2019 in New Delhi, India. The conference, organized by the Government of India was on the theme 'Shaping the new energy world through innovation and collaboration'. The opening ceremony was held under the chairmanship of H.E N.Modi, Prime Minister of India.

Hon Ivan Leslie Collendavelloo, G.C.S.K, SC Deputy Prime Minister, Minister of Energy and Public Utilities made a statement at a ministerial meeting on safe and sustainable energy for all. He emphasized that small island states are the most affected by climate change although they produce the least carbon emissions. He also mentioned the impact of such emissions on small islands, taking the example of the cyclone that hit Rodrigues.

GENDER MAINSTREAMING

❖ Survey on gender impact of water tank project and home solar project

The Ministry appointed the University of Mauritius to carry out a survey of the gender impact of the Home Solar Project and the Water Tank project. The report of the survey was submitted in March 2019. It found that 45% of the beneficiaries of the water tank grant were women, who stated that the project has impacted positively on their lives in terms of health, hygiene, household chores and quality of life.

For the Home Solar project, 54 % of beneficiaries were women who found that the project contributed to financial gains as well as social welfare in terms of better uses of electrical appliances for the whole family and gave them more time for other activities.

❖ Awareness Raising on Renewable Energy

The grant of USD 28 Million provided by the Green Climate Fund to the Government of Mauritius includes a gender component. The Ministry in collaboration with UNDP conducted awareness raising in secondary schools and about 10 women centres and training of women entrepreneur in the solar PV sector.

STATUS OF IMPLEMENTATION BUDGET MEASURES 2018/19

Budget measure	Title of project	Status as at 30 June 2019
163	Commissioning up to 6 additional solar farms	5 new solar farms commissioned
163	Increasing battery storage from 4 MW to 18MW;	4 MW installed at Amaury and Henrietta. Tender launched for 14 MW battery storage on 10 January 2019
163	Implementing a waste-to-energy project that will generate at least 20 MW of electricity	Bids received and evaluated
163	Introducing a new Small-Scale Distributed Generation (SSDG) Scheme	New net-billing scheme launched by CEB
163	CEB will invest around Rs 1.2 billion over the next 3 years for the undergrounding of some 150 kms of its low voltage distribution lines to improve reliability of supply	28 km of underground cable works have been carried out for a total amount of approximately MUR 162 Million.
163	CEB will install around 25,000 smart meters annually to pave the way for automatic metering and development of the smart grid	11,183 Smart Meters and 16,088 Smart Ready Meters were installed. The total number meters (Smart+ Smart ready) installed was 27,271
164	Construction of sewerage facilities to connect 7,800 more buildings and residences to the system	Contracts for Grand Baie sewerage project and Pailles under consideration

b10	Mandatory efficiency labelling will be extended to include air conditioners and washing machines.	Assistance of Indian Ocean Commission obtained to procure testing facilities
b10	A framework will be developed to encourage the use of efficient air conditioners	Contract awarded to Straconsult on 10 June 2019. Completion date January 2020.
157	Increase our support under the Water Tank Scheme to reach out to an additional 30,000 households over the next three years. I am also raising the income eligibility threshold under that scheme from Rs 25,000 to Rs 30,000	8543 applications were processed and Rs 52 Million disbursed.
159	Rs 3.3 billion will be invested in the replacement of 300 kilometres of pipeline, construction of 5 service reservoirs, replacement of 75,000 water meters and construction of the water treatment plant at Bagatelle, amongst others, over the next three years	Seven projects were completed to replace 55.15 kms of pipes at the cost of Rs 574 Million. Six contracts were awarded for replacement of 26 kms of pipes for the amount of Rs 325 million Bagatelle Water Treatment plant was 90% completed 4,523 defective meters were replaced 3 new service reservoirs were constructed
161	Domestic customers who have a swimming pool will have to pay a fixed additional monthly charge of Rs 500 if their monthly water consumption exceeds 50 cubic meters.	New tariff for swimming pools applied to 366 customers as from May 2019.

STATUS OF IMPLEMENTATION KEY ACTIONS

Key Action	**Key Performance Indicator**	**Target 2018/19**	**Achievements as at 30 June 2019**
Generation of electricity from renewable energy sources	Total Electricity generated from renewable energy sources (GWh)	708.1	520
Treatment of water for distribution	Volume of water treated (Mm3)	300	285
Upgrading of Water Supply Infrastructure	Additional length of water pipes replaced (km)	100	100
Connection of premises to the sewerage network	Number of premises connected to the sewerage network	91,940	91,940
Licensing of operators generating, distributing and transmitting electricity	Number of licenses issued (Cumulative)	9	in progress
Development of standards for renewable energy	Number of standards developed (Cumulative)	2	in progress

RISK MANAGEMENT, CITIZEN ORIENTED INITIATIVES, CORPORATE GOVERNANCE

❖ Internal Control

The Internal Control Unit completed 10 audit inspections.

❖ Audit Committee

The Audit Committee of the Ministry met six times during Financial Year 2018/019 and followed on recommendations of the National Audit Office, the Public Accounts Committee Report and eight Internal Control Reports. It sent a report to the Office of Public Sector Governance.

❖ Reform Committee

- Officers were requested to fill in their Performance Appraisal Forms at the start of the cycle in July 2018.

- A Data Capture Exercise for officers of the Ministry was carried out at the beginning of the project and the data was input in the Human Resource Management Information System (HRMIS). Action was initiated by HR Section for the input of payment in the system elements in respect of officers of the Ministry to enable the Finance Section to effect the payroll run.

- A Mobile Application for the EEMO was developed.

❖ Occupation Safety & Health

For the period 2018/2019, 25 occupational health and safety audits were conducted at the different Units of the Ministry and two fire drills were also carried out.

PART III - FINANCIAL PERFORMANCE

FINANCIAL HIGHLIGHTS

❖ Overall Expenditure by Vote

An amount of Rs 3,522,000,000 was allocated to the Ministry in the Budget 2018/19. Out of this Rs 2,004,588,000 was spent.

Expenditure by Sub Head

The Ministry of Energy and Public Utilities had five sub heads under its main vote:

(i)	Sub Head 03 -101	General
(ii)	Sub Head 03 -102	Energy Services
(iii)	Sub Head 03 -103	Water services
(iv)	Sub Head 03 -104	Wastewater Services
(v)	Sub Head 03 -105	Radiation Protection services

Expenditure classification

(i) *Compensation of employees* consists of basic salary and compensation, allowances, extra assistance, cash in lieu of leave, travelling and transport, overtime, end of year bonus, staff welfare and social contributions.

(ii) *Goods and Services* include cost of utilities, fuel and oil, rental, maintenance of equipment, office equipment and furniture, publications and stationery, studies and surveys and other goods and services.

(iii) *Other expenses* are government funds provided to meet payment in respect of Water Tank Grant Scheme to CWA, CWA Pipe Replacement Programme and other water distribution works.

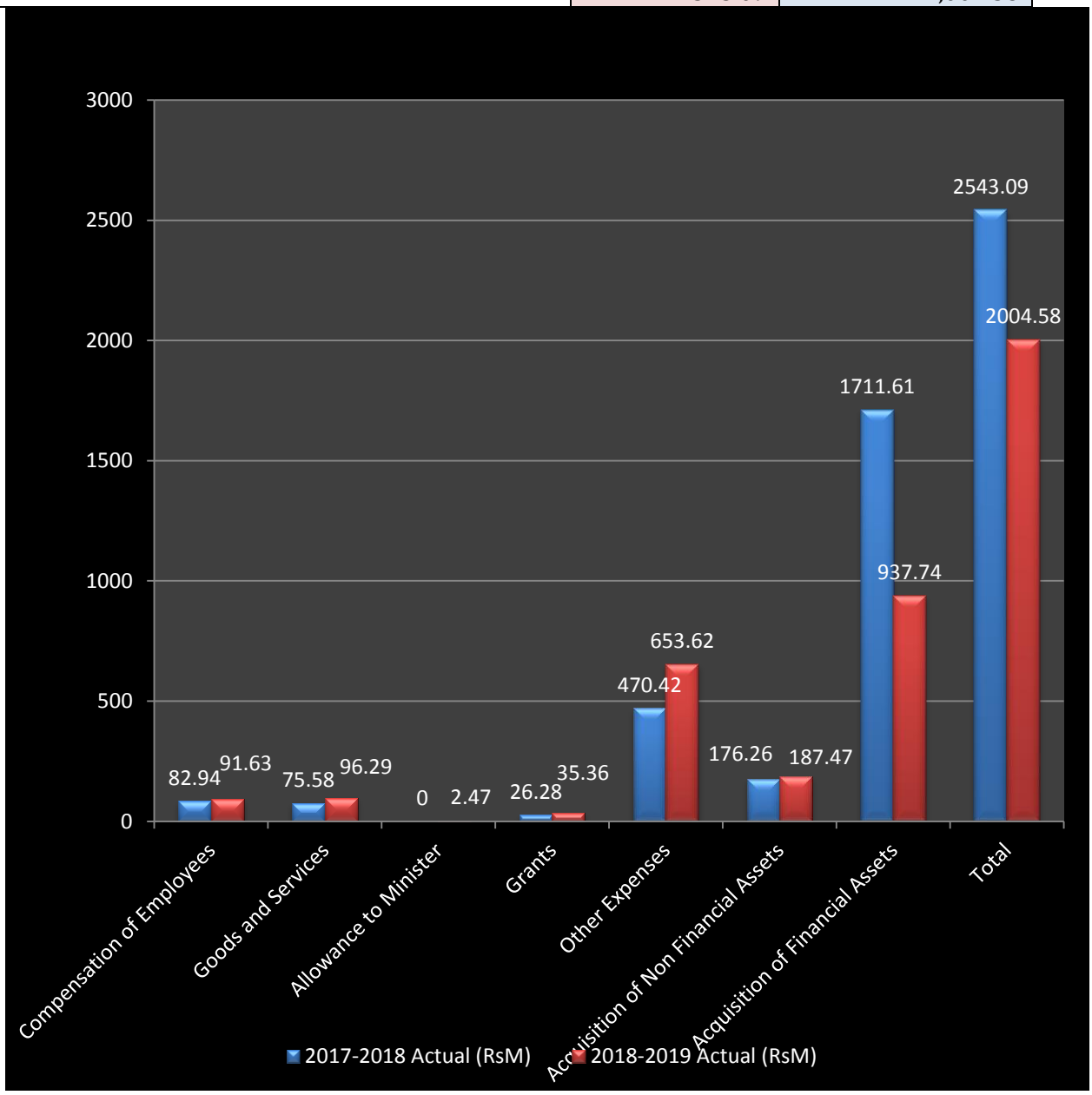
(iv) *Grants* are funds provided to finance the operations of the Utility Regulatory Authority, Mauritius Renewable Energy Agency and contribution to International Organisations such as the International Renewable Energy Agency and the International Atomic Energy Agency.

(v) *Acquisition of Non-Financial Assets* represents Capital Expenditure.

(vi) *Acquisition of Financial Assets* represents loans granted to Central Water Authority and Wastewater Management Authority

❖ Analysis of Major Changes

	Actual Expenditure	
	2017/18 Rs m	**2018/19 Rs m**
Allowance to Minister	-	2.47
Compensation of employees	82.94	91.63
Goods and Services	75.58	96.29
Grants	26.28	35.36
Other Expenses	470.42	653.62
Acquisition of Non-Financial assets	176.26	187.47
Acquisition of Non-Financial assets	1711.61	937.74
Total	2543.09	2,004.58



- There was an increase in the grants to statutory bodies.

Sub Head	Item	Actual Expenditure 2017/18 Rs m	Actual Expenditure 2018/19 Rs m
3-101 General	Utility Regulatory Authority	16.80	22.40
3-102 Energy Services	❖ Contribution to International Organisation	0.10	0.09
	❖ Mauritius Renewable Energy Agency	7.00	11.00
3-105 Radiation Protection	❖ Contribution to International Organisation	2.38	1.87
Total		26.28	35.36

- Expenditure in the water sector increased by 39% and was mainly for replacement of water pipes and construction of water infrastructure, as follows-

	2017/18 Rs m	**2018/19 Rs m**
Water Tank Grant scheme	47.00	52.67
CWA pipe replacement	339.08	549.24
Other distribution works	84.34	51.71
TOTAL	470.42	653.62

- Expenditure for 2018/19 for water sector includes carryover of Rs 98 M.
- An increase of 6.4 % was noted in the item Acquisition of Non-Financial Assets with regard to maintenance of feeder canals, acquisition of machinery and equipment and construction of building for RPA.

Statements of Expenditure for overall Vote 3-1

Economic Categories	2017/18 Actual Expenditure	2018/19 Estimates	2018/19 Actual Expenditure
	Rs M	Rs M	Rs M
Allowance for Minister		2.472	2.472
Compensation of Employees	82.940	101.438	91.627
Goods and Services	75.580	119.275	96.293
Subsidies			
Grants	26.280	38.815	35.364
Other Expenses	470.42	1200.000	653.615
Acquisition of Non-Financial assets	176.26	274.300	187.475
Acquisition of Financial assets	1,711.61	1,785.700	937.742
Total	2,543.09	3,522.000	2,004.588

Statement of Expenditure by Sub-Head

SUB-HEAD 03-101 - GENERAL			
	2017-2018 Actual (Rs M)	**2018-2019 Estimates (Rs M)**	**2018-2019 Actual (Rs M)**
Allowance to Minister		2.472	2.472
Compensation to Employees	38.248	44.047	42.056
Goods and Services	20.875	20.481	24.760
Subsidies	0	0	0
Grants	16.800	23.000	22.400
Acquisition of Non-Financial assets		1.500	1.425
Acquisition of Financial assets			
TOTAL	**75.923**	**91.500**	**93.113**
SUB-HEAD 03-102 ENERGY SERVICES			
Compensation to Employees	3.836	6.975	5.616
Goods and Services	17.400	21.510	38.813
Subsidies	-	-	-
Grants	7.094	13.215	11.094
Acquisition of Non-Financial assets	-	-	-
Acquisition of Financial assets	-	-	-
TOTAL	**28.330**	**41.700**	**55.523**
SUB-HEAD 03-103- WATER SERVICES			
	2017-2018 Actual (Rs M)	**2018-2019 Estimates (Rs M)**	**2018-2019 Actual (Rs M)**
Compensation to Employees	33.606	41.300	36.438
Goods and Services	35.020	74.600	30.385
Subsidies	-	-	-

Other expenses	470.420	1200.000	653.615
Acquisition of Non-Financial assets	176.070	252.000	168.857
Acquisition of Financial assets	1347.700	640.700	617.490
TOTAL	**2062.816**	**2208.600**	**1,506.785**
SUB-HEAD 03-104- WASTE WASTER SERVICES			
	2017-2018 Actual (Rs M)	**2018-2019 Estimates (Rs M)**	**2018-2019 Actual (Rs M)**
Compensation to Employees	1.093	1.900	1.102
Goods and Services			
Subsidies			
Other expenses			
Acquisition of Non-Financial assets			
Acquisition of Financial assets	363.910	1145.000	320.253
TOTAL	**365.003**	**1,146.900**	**321.355**
SUB-HEAD 03-105 - RADIATION SERVICES			
	2017-2018 Actual (Rs M)	**2018-2019 Estimates (Rs M)**	**2018-2019 Actual (Rs M)**
Compensation to Employees	6.156	7.216	6.414
Goods and Services	2.290	2.684	2.335
Subsidies			
Grants	2.384	2.600	1.870
Acquisition of Non-Financial assets	0.190	20.800	17.193
Acquisition of Financial assets			
TOTAL	**11.020**	**33.300**	**27.812**

❖ Revenue

(i) Sale of Goods and Services		**2017/18 Rs m**	**2018/19 Rs m**
Radiation Safety and Nuclear Security Authority	Personal Radiation Monitoring Services	0.28	0.40
	Licensing fees	1.35	1.62
	Remittances from Other Ministries	1.09	1.26
MEPU/Water Resources Unit	Sale of boulders/soil at Bagatelle dam site	0.31	1.36
Wastewater Management Authority	Debt collection	0.33	0.13
Sub Total		**3.36**	**4.77**
(ii) Miscellaneous Revenue			
(a) State Trading Corporation.	Contribution for Adoption of Liquified National Gas(LNG)		10.76
(b)Central Electricity Board			11.39
GROSS TOTAL		**3.36**	**26.92**

PART IV – WAY FORWARD

Trends and Challenges

Major challenges

- Ensuring long term energy security by diversifying sources of electricity generation and cleaner energy
- Impact of climate change, namely rising temperature, decrease in rainfall of around 8% annually and prolonged dry periods on water sector
- Preventing adverse impact of economic and agricultural activity on aquifers and rivers
- Reducing water losses in the distribution system
- Increasing water resources and improving the supply and distribution infrastructure to ensure regular water supply to the population
- Extending wastewater network to environmentally vulnerable regions
- Meeting obligations under the international legal instruments in the field of radiation safety, nuclear security and safeguards.

Strategic Direction

- Develop an adequate and clean power generation capacity and modernize our electricity grid to ensure a reliable, secure and secure electricity supply.
- Accelerate the development of renewable energies to reach 35% in 2025.
- Develop a biomass policy
- Install 10,000 solar panels on the homes of low-income families.
- Encourage through incentive programs the installation of solar panels by households, small and medium enterprises, NGOs and cooperatives and smallholders / breeders.
- Strengthen energy efficiency through the implementation of a national program for the use of LED technologies, energy efficiency labelling and energy audits.
- Implementation of the Regulatory Framework for Electricity by the Utility Regulatory Authority.
- Implementation of a medium term programme of replacement of water distribution pipes, construction of service reservoirs and construction of treatment plants.
- Increase the storage capacity of water with the construction or expansion of dams.
- Develop a medium and long-term action plan to address the effects of climate change on water resources.
- Introduction of a legislative framework for a better management and protection of our water resources.
- Creation of a water observatory as an information portal on the state of water resources.

- Installation of sanitation systems in areas vulnerable to overflows, especially in the former CHA estates, extend the sanitation network in Grand Baie and Pailles and upgrade the treatment stations.
- Implementation of the Radiation Safety and Nuclear Security Act.