



MINISTRY OF ENERGY AND PUBLIC UTILITIES

Annual Report

July 2017-June 2018



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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
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 annual report of my ministry for years 2017/18 highlights the transformation in the energy sector, the progress achieved in the rehabilitation of the water infrastructure and wastewater projects, as well as the extension of radiation services.

Firstly, a new impulse was given to renewable energy with various incentives and simplification of procedures for approval of projects. At the end of the 2017/18 financial year, there were already four solar farms in operation and six others in progress. Small scale distributed generation projects were launched for cooperatives, SME's and households. The Home Solar project which we introduced in 2017 was selected out of 86 entries by IRENA/ Abu Dhabi Fund for Development for funding of 10 million USD. This project is innovative and socially oriented as it aims to support low income groups, specially female headed households. Under this project, the CEB will install solar panels on houses of 10,000 households in the social tariff category.

Mauritius became one of the founding members of the International Solar Alliance, an international network launched by the Prime Minister of India and the President of France, to pool together solar rich countries between the Tropic of Cancer and Tropic of Capricorn. The Africa Energy Forum was held in Mauritius in June 2018, bringing about 1700 delegates and 16 Ministers from Africa. Mauritius was chosen as a venue because of its highly competitive economy, universal electricity coverage and its links with African continent.

In the water sector, the programme for the rehabilitation of the water infrastructure continued with government's financial support while the wastewater works were completed in some regions, which were exposed to environmental risks

Radiation protection services were extended and regulations were introduced to comply with regulatory requirements of the IAEA.

I am thankful to the staff of my ministry, the departments and parastatal bodies under its jurisdiction for their dedication to the modernisation of the energy and utilities sector.

*Hon Ivan Collendavelloo, GCSK, SC,
Deputy Prime Minister,
Minister of Energy and Public Utilities*

Introduction

The Annual Report gives a summary of the projects of the Ministry of Energy and Public Utilities and parastatal bodies falling under its jurisdiction during period July 2017 to June 2018.

The budget of the Ministry amounted to Rs 4.45 billion out of which Rs 4.13 billion was dedicated for capital expenditure. Government provided Rs 2.9 billion for rehabilitation and upgrading of the water infrastructure and Rs 1.2 billion for construction of wastewater networks.

Taking into consideration the comments of the Director of Audit, a Project Implementation Unit was set up at the Ministry, staffed by experienced senior engineers to monitor closely the implementation of capital projects. An Internal audit unit was also set up to carry out regular audits. The Internal audit inspections helped the Ministry to address shortcomings in a timely manner.

*Nirmaladevi Nababsing
Senior Chief Executive
July 2018*

The report

This Annual Report summarises major actions of the Ministry of Energy and Public Utilities for period July 2017 to June 2018.

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 The Ministry

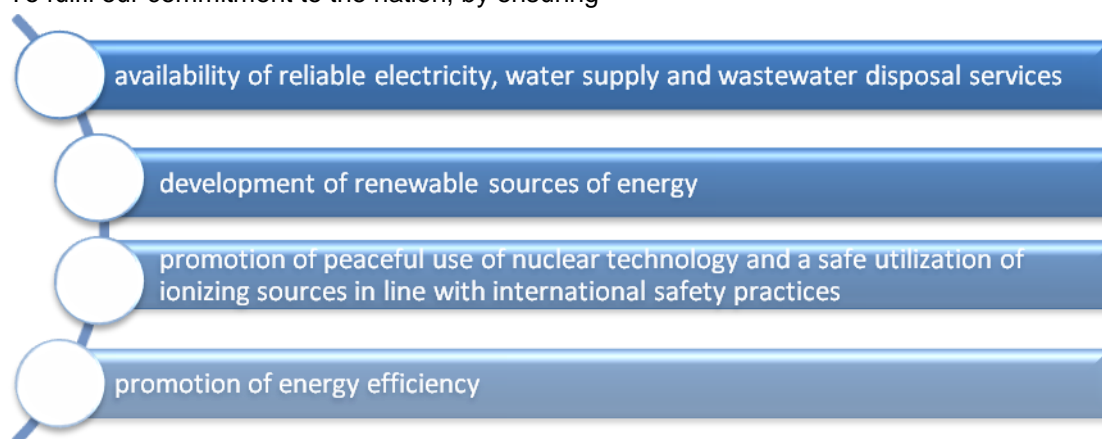
The Ministry of Energy and Public Utilities has the mandate to formulate policies and strategies for the energy, water, wastewater sectors and radiation protection and is responsible for the management of water resources in the country.

1.2 Vision

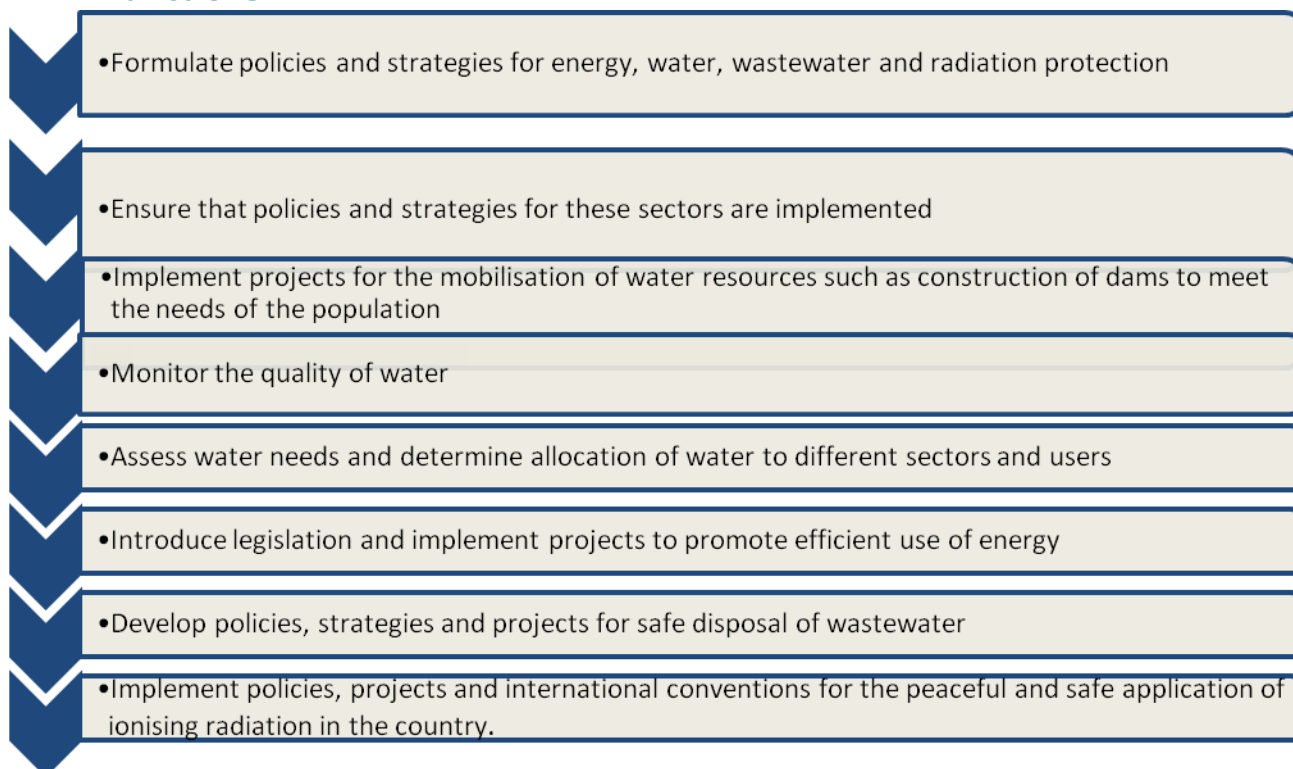
Ensure energy and water security, safe disposal of wastewater and peaceful use of nuclear technology and ionizing sources.

1.3 Mission

To fulfil our commitment to the nation, by ensuring-



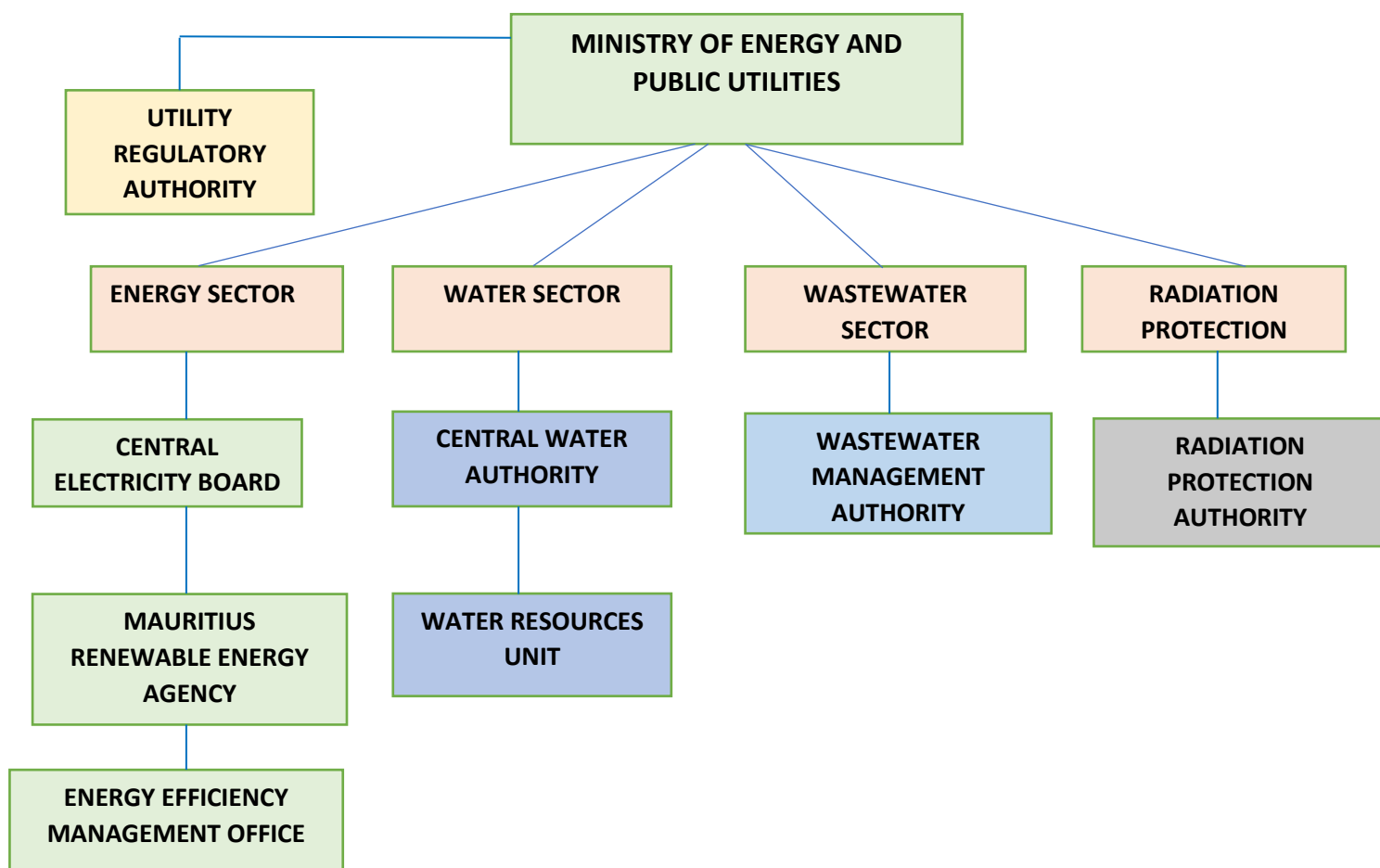
1.4 Functions



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 2018)



1.6.1 The Utility Regulatory Authority (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.



ENERGY EFFICIENCY MANAGEMENT OFFICE

1.6.2 The Energy Efficiency Management Office (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;

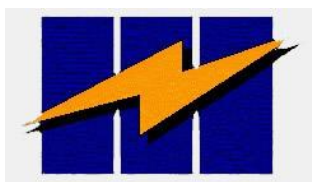
- (f) compile and maintain a database for energy auditors;
 - (g) formulate and recommend innovative financing schemes for energy efficiency projects;
 - (h) devise and assist in the preparation of educational courses and school curricula on the efficient use of energy;
 - (i) establish links with regional 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.
-



MAURITIUS RENEWABLE ENERGY AGENCY (MARENA)

1.6.3 The Mauritius Renewable Energy Agency (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.



CENTRAL ELECTRICITY BOARD

1.6.4 The Central Electricity Board (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 2017, 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
<ol style="list-style-type: none"> 1. St Louis Power station 2. Fort Victoria Power Station 3. Fort George Power Station 4. Nicolay Power Station 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 1.Consolidated Energy Limited 2.Alteo Energy Ltd 3.Terragen 4.Medine 5. OTEOSA (ex CTDS) 6. OTEOLB (ex CTSav) 7. Sarakosolarfarm, Henrietta 8. Eoles de Plaines des Roches 9. Synnove Solar One L'Esperance 10.Solar Field Ltd, Mont Choisy 11. Synnove Solar One, Petite Retraite 12. Eole, Plaine des Roches 13. Sotravic Landfill Gas to Energy , MareChicose

WATER RESOURCES UNIT

1.6.5 The Water Resources Unit(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), 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

1.6.7 The Wastewater Management Authority (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 PROTECTION AUTHORITY



RADIATION PROTECTION AUTHORITY

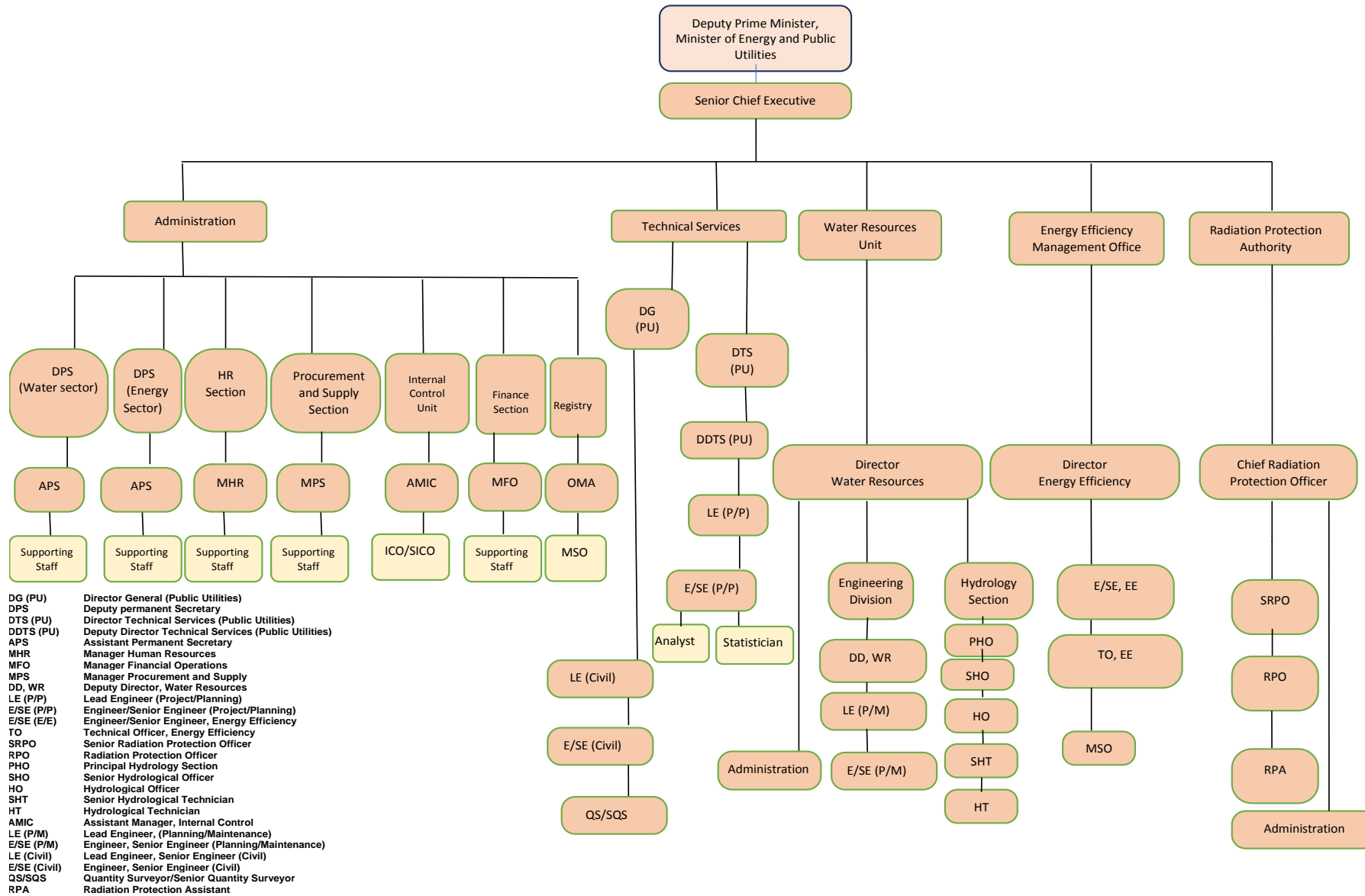
1.6.8 The Radiation Protection Authority (RPA) is the national regulatory body, established under the Radiation Protection Act of 2003, to regulate and control all practices involving the use of ionising radiation. It has also the mission to protect people and the environment against the harmful effects of ionizing radiation through an effective regulatory system.

1.7 Main Legislation

ENERGY SECTOR	WATER AND WASTEWATER SECTORS	RADIATION PROTECTION
Central Electricity Board Act 1963	Central Water Authority Act 1971	Radiation Protection Act 2003
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	
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 (2017-2018)



1.8.1 Staffing Structure – as at June 2018

Grade	Number
Administrative Cadre	6
Professional Cadre and Technical Grades	50
Pre-Registration Trainee Engineer	6
HR Cadre	3
Finance Cadre	6
Procurement and Supply Cadre	3
Internal Control Cadre	2
Officers from CISD	1
Safety and Health Officer –part time	1
Secretarial Class	15
General Services	30
Workmen’s Class	36
Total	159

1.8.2 Vacanciesfilled

Grades	Public service commission	Ministry of Civil Service and Administrative Reforms	Under delegated authority	Ministry of Finance and Economic Development
Administrative	1	-		
Technical	10	-		
Finance Cadre				1
Secretarial Class	-	2		
General Service	-	2		
Workmen’s class		1	4	
Total	11	5	4	1

1.8.3 Retirement

2 employees of general services retired.

1.8.4 Training

11 officers of the Ministry, Water Resources Unit and Radiation protection Authority attended training overseas and 49 attended training locally.

1.8.5 Schemes of Service amended

Nil

1.8.6 Others

○	No. of staff who used passage benefits	36
○	No. of requests for leave without pay	4

1.8.7 Staffing - Parastatal bodies as at 30 June 2017

	CWA	WMA	CEB	MARENA	URA
No of employees	1278	458	1960	5	10
Trainees	109	19	181	1	
Retired	29	4	25		

PART II – ACHIEVEMENTS AND CHALLENGES JULY 2017-JUNE 2018

Utility Regulatory Authority

- ✚ Mr. Alfred Byigero, a Rwandan citizen was appointed as Director of URA on 09 October 2017.
- ✚ URA became a member of the Regional Association of Energy Regulators of Eastern & Southern Africa (RAERESA)/ COMESA's Energy Regulatory arm and the "Reseau Francophone des Regulateurs de l'Energie"- RegulaE.Fr. It was given observer status in the Regional Electricity Regulators Association (RERA)/ SADC's Electricity Regulatory arm, pending approval of full membership.

Energy Efficiency

- ✚ As at June 08, 2018, 48 Energy Auditors 12 Energy Audit Firms, including two from India and one from Reunion registered with EEMO. The EEMO outsourced energy audits of 23 Government buildings.



- ✚ The Energy Efficiency (Labelling of Regulated Machinery) Regulations 2017 came into force on 01 July 2017, providing for mandatory affixing of energy efficiency labels on electric ovens, refrigerating machines and dishwashers. As at June 2018, 195 models of electrical appliances were registered with the EEMO.
- ✚ The PNEE project, implemented under a joint Government/Business Mauritius/ AFD initiative, continued. 88 energy audits were completed.
- ✚ The Ministry appointed consultants who carried out a survey on energy use and energy consumption in the hotel, industrial and SME sectors. The reports will be used to develop energy efficiency guidelines for these sectors.
- ✚ A mobile application for EEMO was launched to create awareness on energy efficiency.
- ✚ The importation of incandescent lamps of 75W and above was banned as from 11 August 2017,.
- ✚ EEMO carried out talks in schools and community centres and organised two media campaigns on energy labeling.

- ✦ Sodium high pressure lamps are commonly used on the 126,000 street lighting systems in Mauritius but they consume a lot of energy and result in high electricity bills to the local authorities. The Ministry appointed a consultant who prepared standard and design guidelines for street and public area lighting, which EEMO has shared with all local authorities.



Sustainable Development Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all

➡ Electricity generation

In 2017, around 79% of the electricity was generated from non-renewable sources, mainly coal and fuel oil while the remaining 21% were from renewable sources, mostly bagasse. The main energy source for electricity generation was coal (41.6%), followed by diesel and fuel (37.4%) and renewable sources (21.8%). In 2017, coal (52.7%) was the major fuel used to produce electricity followed by fuel oil (26.8%) and bagasse (20.2%). Independent Power Producers produced around 60% of the total electricity. The peak power demand was 462 MW in 2017. (Source: *Statistics Mauritius*).

➡ Redevelopment of St Louis Power station

On 20 March 2018, Hon Ivan Collendavelloo, Deputy Prime Minister, Minister of Energy and Public Utilities inaugurated Redevelopment of St Louis Power station comprising 4 units of 15 MW each. The construction started in March 2016 and was completed in September 2017 within the contractual time and without any cost overrun. The total investment was about Rs 4.2 billion. This project has allowed the retirement of old Pielstick engines.

➡ Heavy fuel oil storage tanks

The construction of three heavy fuel oil storage tanks of 6,500 m³ at Les Grandes Salines was initiated in 2016 and was completed in 2017. CEB's investment amounted to Rs 545 million.

➡ Combine Cycle Gas Turbine (CCGT)

On 8 February 2018, CEB invited bids for the Supply, Installation, Testing and Commissioning of a Combined Cycle Gas Turbine (CCGT) Power Plant at Fort George (Mauritius).

➡ Study on LNG

In October 2017, the Ministry appointed Poten and Partners of UK to carry out a feasibility study on the adoption of LNG. The first phase consisted in the assessment of technical, economic and financial feasibility of shifting to LNG, including financial models for implementing the project and the whole

supply chain from import, storage, regasification, electricity generation, bunkering and CNG conversion for inland transportation under Public Private Partnership model. The Consultant's report was due in July 2018.

➡ Waste to Energy Project

On 2 March 2018, the CEB launched a request for proposal (RFP) for procuring electricity from waste to energy plants on the basis of the supply of 1000 tons per day of Municipal Solid Waste.

➡ Home Solar project – Approval by IRENA/Abu Dhabi Fund for Development



In January 2018, the IRENA/ Abu Dhabi Fund for Development approved the **Home Solar project**, which ranked first among 86 entries. The project will benefit from financial support of the Abu Dhabi Fund for Development to the tune of USD 10 million. Under this project, CEB (Green Energy) Ltd will install solar photovoltaic systems on rooftops of 10,000 households, who are in the Social Category tariff 110A over a period of five years.

Photo with Director General of IRENA and CEO of Abu Dhabi Fund for Development

➡ Home Solar project – Inauguration

Hon Ivan Collendavelloo, Deputy Prime Minister, Minister of Energy and Public Utilities, inaugurated the Home Solar Project on 17 May 2018 at the residence of Mrs Marie Valerie Priscile Manan at Allée Jacques, Cascavelle. The implementation of the project started with the installation of 10 Solar PV Kits at in Black River and Bramsthan.



Launching of Home Solar project

➡ Small Scale Distributed Generation (SSDG) Project

Under the **Small Scale Distributed Generation (SSDG) Project**, the total installed capacity reached 6.17 MW as at June 2018. Some 2.78 MW was connected to the CEB grid under the net metering principle. In July 2017, the CEB launched the second phase of the "CEB 2015 SSDG Net Metering Scheme" to integrate a total of 2 MW Small Scale Distributed Generation (SSDG) scheme.

➡ **Medium Scale Distributed Generation**

Under the **Medium Scale Distributed Generation (MSDG) Project**, CEB was expected to complete the grid interconnection of nearly 50% of the allocated 10MW capacity, under the Phase 1 of the Project, by end of 2018.

➡ **Green Energy Scheme for SMEs**

The implementation of the **4 MW Green Energy Scheme for SMEs** started in 2018. Out of the targeted 2000 installations, 1863 applications were received within a period of 2 months.

➡ **Solar power plants**



The implementation of three solar PV farms of a total of 42 MW at Queen Victoria, Solitude and Henrietta and three solar PV farms at Beau Champ, Petite Rivière and Petite Retraite were in progress.

➡ **CEB Green Energy Co Ltd – 2 MW Solar Farm Henrietta**

On 08 June 2018, Hon Ivan Collendavelloo, Deputy Prime Minister, Minister of Energy and Public Utilities laid the foundation stone for a 2 MW Solar Photovoltaic (PV) Farm at Henrietta, to be implemented by CEB (Green Energy) Co. Ltd. The total investment is about 75 million.

➡ **Battery Energy Storage System**

The CEB awarded a contract for the installation of two **2 MW Battery Energy Storage System (BESS)** at the CEB Henrietta and Amaury Substations. The BESS will allow more renewable energy to be integrated in the national grid by stabilising frequency and voltage.

➡ **Inception workshop - GCF grant of Rs 1 billion to Mauritius to accelerate shift to low-carbon economy**

In December 2016, the Green Climate Fund (GCF) approved a grant of 28 million USD for a project “Accelerating the Transformation Change to a Low-Carbon Economy in the Republic of Mauritius. On 9 and 10 November 2017, Hon Ivan Collendavelloo, Deputy Prime Minister, Minister of Energy and Public Utilities opened a two-day inception workshop organised by the Ministry of Energy and Public Utilities, in collaboration with the United Nations Development Programme (UNDP).



WATER SECTOR

Sustainable Development Goal 6 - Ensure availability and sustainable management of water and sanitation for all.

The main source of water supply is ground water (54%) – abstracted through 112 boreholes. The balance (46%) is derived from surface sources – impounding reservoirs and river in takes. There are five main aquifers in Mauritius comprising 429 boreholes - 133 domestic (90%), 157 irrigation (5%), 139 industrial (5%).

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

This 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

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

The 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**
Mare Longue
1948 in
capacity of 6.28 Mm³.



Reservoir

Reservoir, constructed in the year Plaines Wilhems, has a storage

Highlights Water Resources 2017 (Source Statistics Mauritius)

	2016	2017	%
Mean amount of rainfall	1896 millimeters	2134 millimeters	12.6
Water treated by CWA	247 Mm ³	261 Mm ³	5.7
Volume of water sold	119 Mm ³	130 Mm ³	5.3
Revenue collectible from sales of water	Rs 1,455 M	1,504 M	3.4
Per capita consumption per day (domestic)	166 litres	174 litres	

- Mean percentage water level for all reservoirs (excluding Midlands Dam) - 49% to 95%
- Total volume of water sold in 2017 - 120 Mm³, (87.5% constituted of potable water and 12.5% of non-treated water).
- Volume of water sold under domestic tariff - 80 Mm³ of water (67% of the total volume of water sold).

➡ Bagatelle dam

In June 2017, the construction of the Bagatelle Dam with storage capacity of 14.76 million meter cube was completed. The CWA awarded the contract for the construction of Bagatelle Water Treatment Plant in December 2017.

➡ Riviere des Anguilles dam

In October 2017, the Ministry appointed Consultant Studio Ing. G. Pietrangelis.r.l in association with Sub-Consultant Somah Associates Ltd, Enviro-Consult Ltd & Pem to provide Consultancy Engineering Services for the Design Review and Construction Supervision of the Rivière des Anguilles Dam. The dam is expected to be of capacity of about 14 Mm³ and to meet present and future water demand in the south. The water production would increase from 78,000 m³/day to 128,000 m³/day. The consultancy services comprise 2 phases: Phase 1, design review: 12 months. Phase 2, Supervision of works: 42 months.

➤ Feasibility study of Increasing capacity of Nicoliere dam

In May 2017, the Ministry awarded a contract to Consultancy firm, SMEC/Vyaass Consulting Engineer to carry out a feasibility study on increasing the capacity of Nicoliere dam. The contract took effect from August 2017. The contract sum is Rs 4,384,263 and USD 385,223.

➤ Dam break analysis

On 31 May 2018, the Ministry awarded a contract to Studio PetrangeliSRL for an amount of Euro 391,290 and Rs 1,620,000 for a dam break analysis of Mare Aux Vacoas, Mare Longue, Midlands, La Ferme Dam to be in line with international standards. A dam break analysis is a simulation of possible failures in a dam due to natural and unnatural events. The study will be completed by December 2019.

➤ Drilling of boreholes

Three boreholes were drilled and put into use at Beaux Songes, Beemanique and Bonne Mere.

➤ Gender Mainstreaming in Water and Wastewater Sectors

Mrs Vasudha Pangare, Expert on Gender Mainstreaming in Water Sector, appointed by UNOPS under the Integrated Water Resources Management Project visited Mauritius from 4 to 9 September 2017. Mrs Pangare conducted a half day working session on 7 September 2017 to explain the concept of gender to senior officers of the Ministry.



Gender training at Ministry of Energy and Public Utilities

During her second visit in early October, she held a consultative workshop with stakeholders, mainly grass root associations and NGOs as well as a workshop with relevant Officers so as to train them on the use of the gender mainstreaming guidelines and indicators. She submitted gender indicators for the water and wastewater sectors to the Ministry.

➤ Validation of Integrated Water Resources Management Framework

A Workshop was held on 14 and 15 November 2017 to validate the Indicator Framework, which was developed with the support of the University of Mauritius and the collaboration of the Ministry of Environment, the Meteorological Services, Ministry of Health and Quality of Life, CWA, WRU, Wastewater Management Authority, Central Electricity Board and Irrigation Authority. It was submitted in May 2017. The Indicator Framework provides measurable targets to be achieved by 2030.

➤ Integrated Water Resources Management Plan

On 30 July 2017, a workshop was held including all stakeholders to validate the NATIONAL IWRM plan.

➤ Integrated Water Resources Management – Gender Indicators

Two consultations with stakeholders in the water and wastewater sectors and a national workshop were held on 05 October, 2017 on gender indicators. A final working session was held on 12 October to present the set of gender indicators for the water and wastewater sectors.

➤ Training for Water Resources Unit - Integrated Water Resources Management

Training on the use of geophysical equipment for WRU staff from 16 – 20 October, 2017 by Dr O. Banton, Consultant funded by UNEP/GEF.

Training on the use of the Hystra Software for database management system was held for WRU staff from 23 October to 10 November 2017 by an expert from Hystra Software supplier.

➤ Standards for discharge of Effluents

A new set of standards for Discharge and Control of Effluents was prepared with the assistance of Dr Mariah Rosario Coelho, Water Quality Expert.

➤ Guidelines for desalination plants

A guideline for the technical assessment of applications for desalination plants and the issue of desalination plant permits was prepared by Dr O. Banton, Consultant.

➤ World Water Day 2018

CWA organised a three-day exhibition to commemorate the World Water Day from 22 March 2017 at La Marie Water Treatment Plant. The theme chosen by the United Nations for 2018 was “**Nature for Water**”.



UN poster for World Water day

➤ Water Sector Reform

On 18 February 2016, a Reimbursable Advisory Services Agreement between the Government of Mauritius and the International Bank for Reconstruction and Development was signed. This Agreement provided for the World Bank to provide strategic advice and support to the Government for the design and implementation of a Private and Public Partnership for the Central Water Authority and for potable water sector reform. The Bank submitted its final report on 7 October 2016. In February

2017, Government approved the recommendations of the Bank subject to the World Bank mobilising financing of the services of the transaction adviser and the advisory services of the Bank.

The World Bank confirmed that the Global Infrastructure Facility will provide funds amounting to US\$ 475,000 for advisory services by the World Bank and US\$ 400,000 for payment to International Finance Corporation(IFC).

On 11 July 2017, following the signing of a Financial Advisory Services Agreement by IFC and my Ministry, IFC carried out technical, financial analysis and modelling, environmental and social due diligence. The IFC submitted a Transaction Structure Report on 27 March 2018

➡ **Water Tank Scheme**

As announced in the budget speech, as from 1 July 2018, the income ceiling for eligibility of the water tank grant was raised from Rs 25,000 to Rs 30,000. The Ministry simplified the procedures for application for the grant. Applicants were no longer required to swear an affidavit. Old age pension is not included in the household income and applicants do not have to produce pension documents. 10,632 applications were received in 2017/18 and 10,899 were approved, including applications carried over since 2016/2017. An amount of Rs 41,908,326 M was disbursed.

➡ **Pipe Replacement works**

In 2017/18, CWA :-

- (i) replaced some 90 kms of old and defective pipes across the country;
- (ii) awarded contracts for the construction of 2 new reservoirs which are under construction at Riviere du Rempart of capacity 3000 metres cube. The construction of a service reservoir of 2000 metres cube at Balisson was ongoing;
- (iii) installed 9 containerised pressure filtration plants at:
 - Mon Loisir Rouillard Reservoir – 2 units of capacity 2,000 m³/day each
 - Trianon - 1 unit of capacity 2,000 m³/day each
 - Tyack - 1 units of capacity 2,500 m³/day each
 - Pont Lardier - 1 unit of capacity 2,500 m³/day each
 - Riviere du Poste water treatment plant: 2 units of capacity 2,500 m³/day
 - Mont Blanc water treatment plant: 1 unit of capacity 2,500 m³/day
 - Belle Rose Clemencia - 1 unit of 2500m³/day

- (iv) In March 2018, CWA embarked on a project to replace 32 km of water pipes in Rose Hill to the tune of Rs 325 million.



- (v) On 4 August, 2017, the Riviere du Rempart water supply project was launched by Hon Pravind Jugnauth, Prime Minister, Minister of Home Affairs, External Communications and National Development Unit and Minister of Finance and Economic Development, in the presence of Hon Ivan Collendavelloo, Deputy Prime Minister and Minister of Energy and Public Utilities,. The project consists of replacement of 15 kms of pipes and the construction of a service reservoir.



WASTEWATER SECTOR

About 27% of the population is connected to the public sewer network. The WMA operates the following treatment plants –

- ✚ **St Martin Wastewater Treatment Plant**, constructed in 2004, has a hydraulic design capacity of 69,000 m³/day and treats wastewater up to tertiary level.
- ✚ **Mt. Jacquot Wastewater Treatment Plant**, constructed in 2007, has a hydraulic design capacity of 48,000 m³/day, and provides an advanced primary treatment process
- ✚ **Grand Baie Wastewater Treatment Plant**, built in 2003, has a hydraulic design capacity of 5,500 m³/day
- ✚ **Baie du Tombeau Wastewater Treatment Plant**, built in 2000, has a hydraulic design capacity of 48,000 m³/day and provides preliminary treatment.



- During financial year 2017/18, about 3240 house connections were completed and an amount of Rs 1.2 billion was spent by WMA. At the end of March 2018, 87,556 customers were registered with the WMA, representing 27% of the total households.
- About 19% of domestic consumers, who use up to 6m³ of water, are exempted from payment of wastewater charges.
- **Projects completed as at June 2018**
 - **Pailles Guibies Phase 1** consists in the construction of a pumping station and 4 kms of trunk sewer. The works were completed in June 2018.
 - **Verger Bissambar** - Construction of about 2.8 kms of street sewer and 180 house connections and replacement of about 0.75 km of CWA pipes was completed.

- **Cité Palmerstone, Phoenix** – 400m of sewer, 80 house connections, and replacement of 300 m of CWA pipes. Works started in April 2017 and were completed in April 2018.
- **Project at Cipaye Brule** –3.1 kms of sewer, 155 houses, 1.2 kms of CWA pipes. Works started in October 2016 and were completed in May 2018.
- **Cite la Cure**– 540 m of sewer, 84 house connections, replacement of 506 m of CWA pipes. Works started in April 2017 and were completed in May 2018.
- **Projects ongoing**
- **Cité Paul & Virginie, Port Louis** – 1054 m of sewer, 134 house connections..
- **Highlands Sewerage Project – Phase 1** - Construction of 2.4km of trunk sewer along Tout-Court Road, Belle Terre Road and Railway Road and some 200 house connections.Works started in October 2017.
- **Riviere du Rempart Sewerage Project** - Upgrading the existing treatment plant at Schoenfeld Riviere du Rempart and the connection of some 75 houses in the vicinity, WMA appointed Scene-Ries Consult Ltd in August 2017 to assess the feasibility of the project.
- **Tranquebar/ Bangla Desh/ Ste Marie Sewerage Project** - 2.2 km of sewer, 20 houses, 745 m of CWA pipes.Contract awarded in July 2017.

RADIATION PROTECTION

- In 2017/18, there were 245 facilities and 931 radiation sources regulated by the RPA.
 - The RPA extended its dosimetry service to monitor 112 additional radiation workers, resulting in an increase in the number of workers being monitored, from 922 in July 2017 to 1034 in June 2018.
 - In 2017, the RPA embarked on the Single Window Project being implemented by the Government for business facilitation, namely online applications for Import Permits for the importation radiation sources.
 - Government received financial assistance of around Rs. 10 M from the US Department of Energy (DoE), for the construction of a Centralised Radiological Source Storage Facility to cater for the safe and secure storage of disused radioactive sources.
 - In May 2018, the Ministry awarded a contract to Modern Jurassic Building and Construction Ltd for the construction of RPA's new headquarters at Helvetia. This project will cost around Rs. 25 M.
 - A five-day African Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology (AFRA) meeting was held from 19 to 23 March 2018 in Mauritius. About 40 participants attended the meeting.
-

INTERNATIONAL AND REGIONAL COOPERATION

➤ Signing of MOU – Italy and Mauritius

On 12 February, 2018, the Ministry signed a Memorandum of Understanding with the Italian Ministry of Environment, Land and Sea. The MoU provides for cooperation between Mauritius and Italy in the field of renewable energy and water.



Signing ceremony with Mr Francesco La Camera, Director General , Ministry of Environment, Land and Sea of Italy

➤ Signing of MOU between MEPU and Institute for Environmental Analytics, UK– May 2018

In May 2018, the Ministry signed a Memorandum of Understanding (MoU) with the Institute for Environmental Analytics (IEA), a non-governmental organisation based at the University of Reading, U.K. The IEA will implement a RE-SAT project funded by the UK Space Agency's International Partnership Programme. The project uses Earth observations and other sources of data to support Small Island Developing States (SIDS) in their transition from fossil fuel electricity generation to renewables by implementing and operationalising the RE-SAT energy planning software platform.

➤ International Solar Alliance

The Founding Conference of the International Solar Alliance was held in New Delhi, India on 11 March 2018 under the joint chairmanship of H.E Narendra Modi, Prime Minister of India and H.E Emmanuel Macron, President of the Republic of France. Mauritius was represented by Hon Ivan Collendavelloo, GCSK, SC, Deputy Prime Minister, Minister of Energy and Public Utilities,.Delegations from 46 countries including Heads of State and Government from 21 countries were present.



The International Solar Alliance is open to countries which lie either completely or partly between the Tropic of Cancer and the Tropic of Capricorn. The primary objective of the alliance is to work for efficient exploitation of solar energy to reduce dependence on fossil fuels and to use solar energy to bring electricity to remote regions. As at June 2018, 61 countries had signed its Framework

Agreement, out of which 32 had deposited the Instrument of Ratification. Mauritius is one of the Founding members and deposited the instrument of ratification on 27 May 2017, during the State Visit of the Prime Minister to India.

➡ 20th Africa Energy Forum

The 20th African Energy Forum was held at Le Morne, Mauritius from 19 to 22 June 2018. This event, which is organised every year by Energy Net, UK, brings together policy makers, investors, power companies, banking institutions and international and regional agencies. It is coupled with a large scale exhibition to showcase new technologies and services in the energy sector. The three last meetings were held in Copenhagen in 2017, in London in 2016 and in Dubai in 2015. About 1700 delegates, including 16 Ministers from Africa attended the meeting in Mauritius

Energy Net Ltd decided to hold the Forum in Mauritius on grounds that Mauritius is a highly competitive economy, has universal electricity coverage and is a gateway to the African continent.



In his opening speech the Deputy Prime Minister, Minister of Energy and Public Utilities, welcomed the delegates to the forum and reminded them of the historic symbolic links of Le Morne Cultural Heritage site to Africa. He stated that in the New Deal for Energy in Africa, the African Development Bank mentions that “over 645 million Africans have no access to electricity. “

He also participated in a country session dedicated to Mauritius. He mentioned that Mauritius has been consistently working towards diversifying its energy mix and has set the ambitious target of achieving 35% renewables in its electricity mix by 2025, and maintaining that percentage by 2030. He stated that since 2015, Mauritius has completely reviewed its renewable energy policies, with special focus on the use of solar photovoltaic electricity. He stated that by 2025 and 2030, Solar PV development is planned to respectively achieve a target of about 10%, and 12% contribution.

STATUS OF IMPLEMENTATION OF BUDGET MEASURES July 2017 – June 2018

BUDGET MEASURE	TITLE OF PROJECT	STATUS AS AT JUNE 2018
161	Eighth, CEB will implement a new scheme for solar PV for small commercial businesses. Under this scheme, the initial investment cost for the installation of a 2 kw solar PV will be financed by CEB. Fifty per cent of the investment will be paid back by the small enterprises over a period of 24 months through a net metering scheme. Thus, the enterprise will have the benefits of consuming electricity free of charge and exporting any surplus electricity generated to the CEB grid.	ongoing
182	As we modernise our country, we must also invest in the production of clean and renewable energy.	SSDG scheme, Green energy schemes for cooperatives and SME's, Home solar project launched. Six new solar farms under construction
183	First, a 2 MW solar PV farm will be set up by CEB (Green) Co Ltd at Henrietta by March 2018, followed by an investment in an additional 13 MW capacity by the end of 2018.	Contract awarded by CEB Green Energy Ltd for 2 MW solar plant at Herietta
184.	Second, CEB will, over the next two years, invest in battery storage of 8 MW.	Contract awarded by CEB for 4MW battery storage at Amaury and Henrietta
185.	Third, some Rs 700 million will be invested in the 'Solar Home Project' comprising the installation of 10,000 roof top solar panels over the next 5 years for low income households in the social tariff category.	Solar home project launched in 2017. As at June 2018, about 500 solar panels installed
187.	Fifth, the CEB will extend the Small Scale Distributed Generation scheme to a further 1,000 households	SSDG scheme launched
190.	Eighth, to improve efficiency in energy consumption the importation of incandescent lamps of 75 watts and above will be prohibited.	importation of incandescent lamps of 75 watts and above banned from August 2017
191	This budget also provides for the staffing and operationalization of the Utility Regulatory Authority.	URA appointed a Director and support staff
198.	First, CWA will invest some Rs 210 million in the installation of steel tanks of 2,000 cubic meters in 21 water distressed regions.	Bids exercise cancelled as price quoted was too high.
199	Second, Rs 135 million will be invested in 15 mobile plants to treat water affected by mud during heavy rainfalls.	9 mobile filtration plants installed
200	Third, duplicate boreholes will be drilled on 13 sites around the country to avoid interruptions in the water supply caused by breakdown in the use of boreholes.	Completed
201.	Fourth, solar powered borehole pumps will also be installed on 12 sites to improve efficiency.	Bids launched for 12 PV panels to power pumps
202.	Fifth, I am extending the water tank scheme for another year and raising the income eligibility ceiling for the grant under this scheme from Rs 15,000 to Rs 25,000.	Implemented
204.	In the medium term, our plan is to expand the capacity of existing reservoirs, build new ones and complete the replacement of old pipes.	contract for two reservoirs at Riviere du Rempart and Balisson awarded
205	Our seventh measure for the water sector is to provide Rs 598 million for the installation of a water treatment plant to make the Bagatelle Dam fully operational.	Contract awarded and works started in February 2017
206.	Eighth, the capacity of La Nicolière Water Treatment plant is being upgraded to increase the supply of potable water to the northern region.	Feasibility study completed
207.	Ninth, I am providing for consultancy services for a feasibility study on the construction of the Rivière des Anguilles dam. Our objective is to add another 50 million cubic meters to our water supply capacity in the regions of south and south west by 2022.	Consultant appointed to carry out design review.
208.	Tenth, this Budget provides Rs 2.3 billion for the replacement of 264 kilometers of pipes.	About 100 kms of pipes replaced
209.	And eleventh, Rs 400 million will be invested to improve the efficiency of 150 stations that pump water into service reservoirs.	Procurement initiated
214/215	We will also be investing some Rs 3.8 billion in wastewater management over the next three years. For the next financial year, we are providing for projects at Grand Baie, Pailles, Highlands, Cité Palmerstone, Tranquebar. Bids to be launched for Cité Malherbes, Cité Atlee. Bids laucnehd for Grand Baie.	Projects completed at Cité La Cure, Cité Paul et Virginie. Projects ongoing at Pailles, Highlands, Cité Palmerstone, Tranquebar. Bids to be launched for Cité Malherbes, Cité Atlee. Bids laucnehd for Grand Baie.

STATUS OF IMPLEMENTATION OF KEY ACTIONS

Key Action	Key Performance Indicator	Target 2017/18	Achievement as at 30 June 2018
Upgrading of Water supply infrastructure	Length of water pipes laid (km)	100 km	90
Generation of additional electricity from wind and solar sources	Additional electricity generated from wind and solar sources (MW)	80 MW	80MW
Energy audit of government-owned buildings	Number of buildings audited	20	7 and 16 ongoing
Mobilisation of ground water	Number of boreholes drilled	4	3
Connection of additional premises to the sewerage network	Number of additional premises connected to the sewerage network	645	645
Monitoring of radiation workers	Number of radiation workers monitored	1000	1000

Risk Management, Citizen Oriented Initiatives & Good Governance

➤ Internal Control

The Internal Control Unit's annual plan 2017/18 consisted of 19 planned audits out of which 15 were completed. Analysis of 7 internal control reports revealed that out of 50 recommendations, 38 have been implemented (76%).

➤ Audit Committee

The Audit Committee of the Ministry had 8 meetings and followed up on issues raised in the Director of Audit's report, PAC report and Internal Control Reports. Quarterly reports were submitted regularly to the OPSG and a final report at the end of the calendar year.

➤ Reform

• Performance Management System

The Performance Management Cycle consists of three phases - the Performance Agreement Phase, the mid-term appraisal and the final appraisal. Officers were requested to fill in their Performance Appraisal Forms at the start of the cycle in July 2017. On 30 June 2018, out of **83** officers, **81** had completed their appraisal. 1 Confidential Secretary had retired from the service in November 2017 and one Office Attendant and Senior Office Attendant did not fill the Performance Appraisal Form on ground that he had already reached top salary.

• Human Resource Management Information System (HRMIS)

A Data Capture Exercise for officers of the Ministry was carried out at the beginning of the project following which same was input in the system. Data pertaining to officers of the Ministry is updated on a continuous basis in terms of their assignment of higher duties, promotion, appointment to other posts and transfer to and from other Ministries. Updating of data on the HRMIS is a continuous process.

• Implementation Plan of the Public Sector Business Transformation Strategy

A Transformation Implementation Committee was set up to implement the Public Sector Business Transformation Strategy. It identified four key measures to be implemented, namely the EEMO mobile app which has already been launched.

- **Occupation Safety & Health**

20 Safety Audits were conducted at the different Units of the Ministry and one risk assessment was carried and relevant recommendations have been implemented.

PART III - FINANCIAL PERFORMANCE

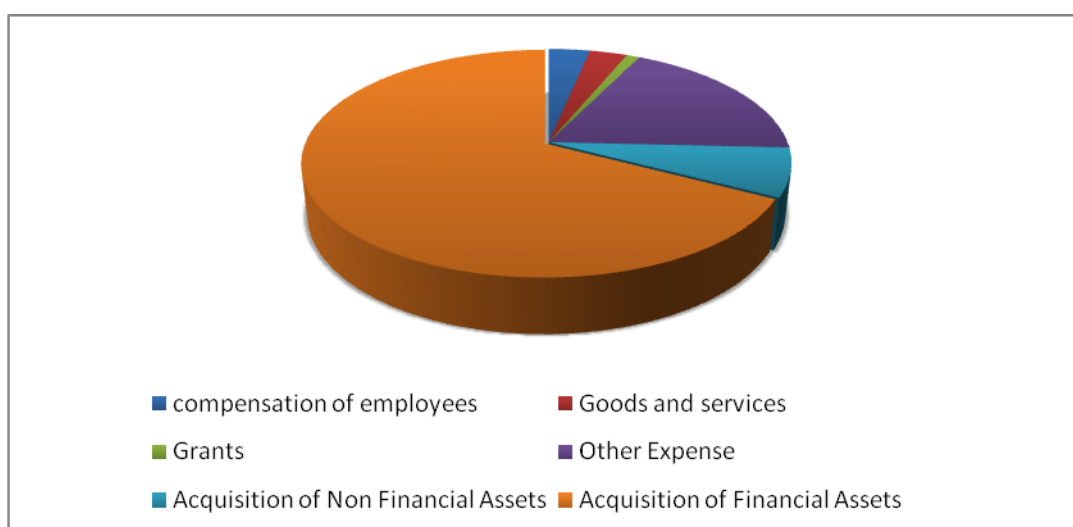
Financial Highlights

Overall Expenditure (BY VOTE)

The Budget 2017-2018 provided an amount of Rs 4,450.00 (M) to the Ministry of Energy and Public Utilities out of which Rs 2,543.09 (M) was spent. A breakdown of expenditure by economic categories is shown below:-

Vote 3-1 Energy and Public Utilities

EXPENDITURE CLASSIFIED BY ECONOMIC CATEGORIES (RsM)



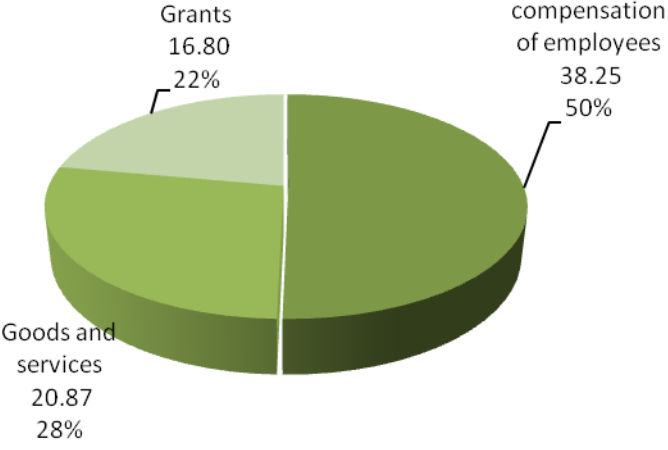
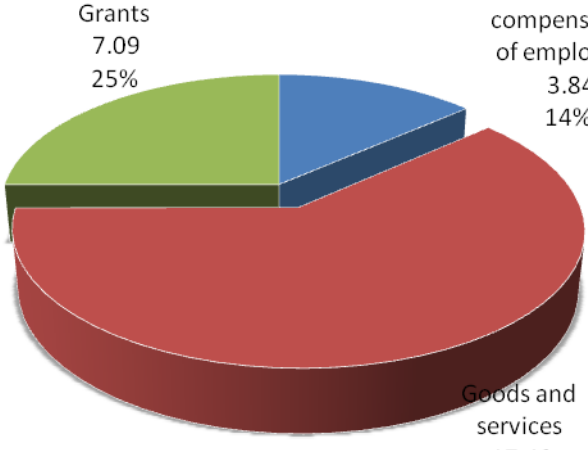
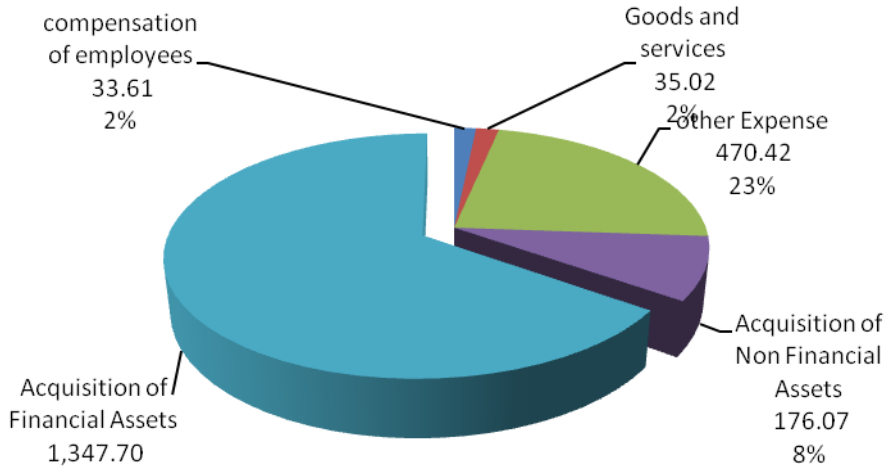
- (i) *Compensation of employees* consists of basic salary and compensation, allowances extra assistance, cash in lieu of leave, travelling and transport overtime, staff welfare and social contributions.
- (ii) *Goods and Services* include of cost of utilities, fuel and oil, rental, maintenance of equipment, publications and stationery, studies and surveys and other goods and services.
- (iii) *Subsidies* are government grants provided to the Wastewater Management Authority and Central Water Authority.
- (iv) *Grants* are funds provided to finance the operations of the Utility Regulatory, Mauritius Renewable Energy Agency and contribution to the 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.

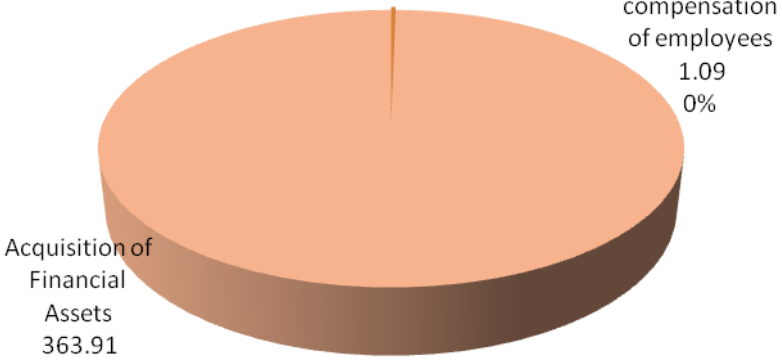
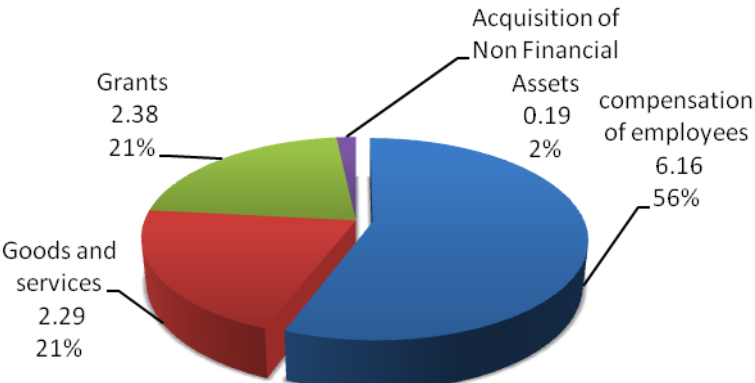
Expenditure by Sub Head

The Ministry of Energy and Public Utilities had the following Sub Heads under the 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

Details of the expenditure by Sub Head and by economic categories are shown below:

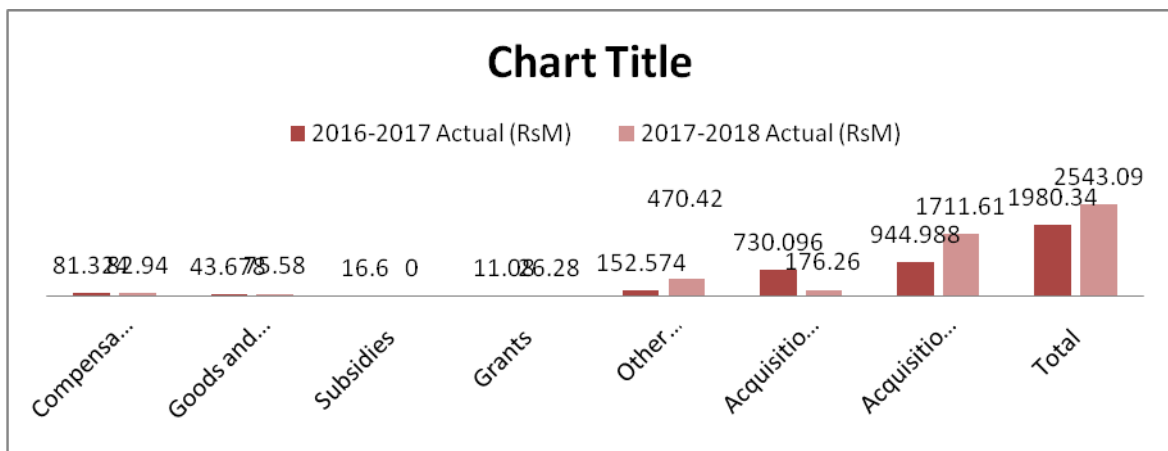
03-101 General Rs M	 <table border="1"> <thead> <tr> <th>Economic Category</th> <th>Amount (Rs M)</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>compensation of employees</td> <td>38.25</td> <td>50%</td> </tr> <tr> <td>Goods and services</td> <td>20.87</td> <td>28%</td> </tr> <tr> <td>Grants</td> <td>16.80</td> <td>22%</td> </tr> </tbody> </table>	Economic Category	Amount (Rs M)	Percentage	compensation of employees	38.25	50%	Goods and services	20.87	28%	Grants	16.80	22%			
Economic Category	Amount (Rs M)	Percentage														
compensation of employees	38.25	50%														
Goods and services	20.87	28%														
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03-102 Energy Services Rs M	 <table border="1"> <thead> <tr> <th>Economic Category</th> <th>Amount (Rs M)</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Goods and services</td> <td>17.40</td> <td>61%</td> </tr> <tr> <td>Grants</td> <td>7.09</td> <td>25%</td> </tr> <tr> <td>compensation of employees</td> <td>3.84</td> <td>14%</td> </tr> </tbody> </table>	Economic Category	Amount (Rs M)	Percentage	Goods and services	17.40	61%	Grants	7.09	25%	compensation of employees	3.84	14%			
Economic Category	Amount (Rs M)	Percentage														
Goods and services	17.40	61%														
Grants	7.09	25%														
compensation of employees	3.84	14%														
03-103 – Water Services Rs M	 <table border="1"> <thead> <tr> <th>Economic Category</th> <th>Amount (Rs M)</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Acquisition of Financial Assets</td> <td>1,347.70</td> <td>65%</td> </tr> <tr> <td>Other Expense</td> <td>470.42</td> <td>23%</td> </tr> <tr> <td>Goods and services</td> <td>35.02</td> <td>2%</td> </tr> <tr> <td>Acquisition of Non Financial Assets</td> <td>176.07</td> <td>8%</td> </tr> </tbody> </table>	Economic Category	Amount (Rs M)	Percentage	Acquisition of Financial Assets	1,347.70	65%	Other Expense	470.42	23%	Goods and services	35.02	2%	Acquisition of Non Financial Assets	176.07	8%
Economic Category	Amount (Rs M)	Percentage														
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Other Expense	470.42	23%														
Goods and services	35.02	2%														
Acquisition of Non Financial Assets	176.07	8%														

<p>03-104 Wastewater services</p>	 <p>compensation of employees 1.09 0%</p> <p>Acquisition of Financial Assets 363.91 100%</p>
<p>03-105 Radiation Protection Services</p>	 <p>Acquisition of Non Financial Assets 0.19 2%</p> <p>compensation of employees 6.16 56%</p> <p>Grants 2.38 21%</p> <p>Goods and services 2.29 21%</p>

➡ **Revenue**

The Radiation Protection Authority collected an amount of Rs2.72 M for personal radiation monitoring services and licensing fees. An amount of Rs 0.31 M was obtained by the Ministry for sale of boulders and soil at Bagatelle dam site and an amount of Rs 0.33 M from the Wastewater Management Authority in respect of debts prior to 2001.

➡ **Analysis of Major Changes**



The major variations in the overall expenditure of Vote 3-1-Energy and Public Utilities concerns the Acquisition of Non-Financial Assets. The decrease in 2017-2018 was due mainly to completion of major projects such as Bagatelle dam.

SUB HEAD WATER SERVICES 5-103

Project	Project Value Rs(M)	2016-2017 Actual Expenditure Rs(M)	2017-2018 Actual Expenditure Rs(M)
(i)Bagatelle Dam	7,126.48	312.00 363.17 (BMF)	158.62
(ii)Riviere Des Anguilles	3,262.40	-	4.00
(iii)Arnaud(Diversion Dam)	221.95	20.40	
Drilling of boreholes		2.13	3.69
Upgrading of Dam(La Ferme)	369.59	-	
Maintenance of Feeder Canals	-	1.26	8.52
Acquisition of other Machinery & Equipment		1.13	1.24
		700.03	176.07

The second change concerns expenditure in relation to the Pipe Replacement Programme as shown below. Expenditure amounting to Rs 127.71M was funded from the Build Mauritius Fund in 2016/2017 compared to an amount of Rs339.08M, incurred in the financial year 2017/2018 under the Ministry's vote:

Description	2016/2017 Actual Expenditure Rs(M)	2017-2018 Actual Expenditure Rs(M)
CWA-Pipe Replacement Programme	127.71(BMF)	339.08
Total	127.71	339.08

Thirdly Grants to Statutory Bodies and International Organisations increased as shown below:

Sub-Head	Description	2016-2017 Actual Expenditure Rs(M)	2017-2018 Actual Expenditure Rs(M)
3-101-General	Utility Regulatory Authority	5.00	16.80
3-102 (Energy Services)	(i)Contribution to International organization (ii)Mauritius Renewable Energy Agency	0.10 4.00	0.10 7.00
3-105-Radiation Protection Services	Contribution to International organization	1.98	2.38
Total		11.08	26.28

An increase of 81% is noted in respect of Acquisition of Financial Assets as detailed below-

Sub-Head	Description	2016-2017 Actual Expenditure Rs(M)	2017-2018 Actual Expenditure Rs(M)
3-103 (Water Services)	(i)Loans to CWA (ii)Equity Participation (CWA)	408.42 -	447.70 900.00
3-104 (Wastewater Services)	Loans to Wastewater Management Authority Shares & Equity Participation	536.57 -	255.00 108.90
Total		944.99	1,711.60



Statement of Revenue

Description	2016-2017 Actual Rs (M)	2017-2018 Estimates Rs (M)	2017-2018 Actual Rs (M)
Radiation protection services			
(a) Personal Radiation Monitoring Services (PRMS)	0.13	0.5	0.28
(b) Licensing	0.59	1.5	1.35
Sub Total	0.72	2.00	1.63
Remittances by other Ministries/Departments in respect of PRMS	0.83	1.0	1.09
Wastewater Management Authority (Debt collection)	-	1.0	0.33
Sale of Boulders/soil Bagatelle dam	4.13	-	0.31
Others-Mediation fees	0.5	-	
Gross Total	6.18	4.0	3.36



Statements of Expenditure for overall Vote 3-1

Economic Categories	2016/2017 Actual			2017/2018 Estimates Rs (M)	2017/2018 Actual Rs (M)
	Ministry's vote Rs (M)	Build Mauritius Fund Rs (M)	TOTAL Rs (M)		
Compensation of Employees	81.324	-	81.324	102.225	82.940
Goods and Services	43.678	-	43.678	188.960	75.580
Subsidies	16.600	-	16.600	-	
Grants	11.080	-	11.080	31.815	26.280
Other Expense	-	152.574	152.574	1,423.000	470.42
Acquisition of Non-Financial Assets	366.929	363.167	730.096	554.000	176.26
Acquisition of Financial Assets	944.988	-	944.988	2,150.00	1,711.61
	1,464,599	515,741	1,980,340	4,450.000	2,543.09

03-101 General	2016-2017 Actual (RsM)	2017- 2018 Estima tes (RsM)	2017- 2018 Actual (RsM)
Compensation of Employees	34.100	44.309	38.248
Goods and Services	13.037	20.891	20.875
Subsidies	-		-
Grants	5.000	16.800	16.80
Acquisition of Non Financial Assets			
Acquisition of Financial Assets			

03-102- Energy Services	2016- 2017 Actual (RsM)	2017- 2018 Estima tes (RsM)	2017-2018 Actual (RsM)
Compensation of Employees	5.573	7.406	3.836
Goods and Services	10.278	73.279	17.400
Subsidies	-	-	-
Grants	4.096	12.415	7.094
Acquisition of Non Financial Assets	30.000	-	-
Acquisition of Financial Assets	-	-	-

TOTAL	52.137	82.000	75.923	TOTAL	49.947	93.100	28.330
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03-103- Water Services	2016- 2017 Actual (RsM)	2017- 2018 Estimates (RsM)	2017- 2018 Actual (RsM)
Compensation of Employees	33.731	40.715	33.606
Goods and Services	18.314	89.185	35.020
Subsidies	16.600	-	-
Other Expense	-	1,423.000	470.420
Acquisition of Non Financial Assets	336.895	531.000	176.070
Acquisition of Financial Assets	408.416	950.000	1,347.700
TOTAL	813.956	3,033.900	2062.816

03-104-Wastewater Services	2016- 2017 Actual (RsM)	2017-2018 Estimates (RsM)	2017- 2018 Actual (RsM)
Compensation of Employees	1.776	2.000	1.093
Goods and Services	-	3.000	-
Subsidies	-	-	-
Grants	-	-	-
Acquisition of Non Financial Assets	-	-	-
Acquisition of Financial Assets	536.572	1,200.000	363.910
TOTAL	538.348	1,205.000	365.003

03-105 Radiation Protection Services	2016-2017 Actual (RsM)	2017-2018 Estimates (RsM)	2017-2018 Actual (RsM)
Compensation of Employees	6.144	7.795	6.156
Goods and Services	2.049	2.605	2.290
Subsidies	-	-	-
Grants	1.984	2.600	2.384
Acquisition of Non Financial Assets	0.034	23.000	0.190
Acquisition of Financial Assets	-	-	-
TOTAL	10.211	36.000	11.020

Part IV – WAY FORWARD

Trends and Challenges

Major challenges

- Ensuring long term energy security by diversifying sources of electricity generation
- Shifting towards cleaner energy
- Increasing investment in renewable energy
- Impact of climate change, namely rising temperature, decrease in rainfall of around 8% annually and prolonged dry periods on water sector
- Addressing water stress
- Preventing adverse impact of economic and agricultural activity on aquifers and rivers
- Reducing water losses in distribution system
- Increasing water resources and improving the supply and distribution infrastructure to ensure regular water supply to the population

- Extending wastewater to environmentally vulnerable regions
- Meet obligations under the international legal instruments in the field of radiation safety, nuclear security and safeguards.

Strategic Direction

- Increasing electricity generation capacity to meet medium and long term demand
- Increase the contribution of renewable energy technologies and encouraging the participation of small and medium producers in generation of electricity through use of renewable technologies
- Develop standards for renewable energy.
- Encourage battery storage energy systems and strengthen grid capacity to integrate a higher share of renewable energy.
- Implement energy efficiency measures in all sectors and extend mandatory to other electrical appliances
- Establish a licensing system to license power producers
- Develop a legal framework for management, conservation and control of water resources.
- Continue implementing a water supply infrastructure development programme with replacement of old pipes, construction and rehabilitation of dams, replacement of consumer meters, construction of new service reservoirs, and upgrading of treatment plants.
- Implement an integrated water resources management system
- Monitor the quality of water with effective databases and indicators and monitoring of effluent discharge.
- Extend sewerage network to densely populated areas and upgrade major wastewater treatment plants.
- Ensure the safety and security of radiation sources for the protection of the public and the environment against the harmful effects of ionizing radiation.