



**MINISTRY OF SCIENCE, TECHNOLOGY, ENERGY AND MINING**



**MINISTRY PAPERS #48-67/15**  
**2014 - 2015**





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## 1.0 INTRODUCTION

The Ministry of Science, Technology, Energy and Mining (MSTEM) was created in January 2012. It is comprised of the former Ministry of Energy and Mining (MEM), the information, communication and technology entities from the former Ministry of Technology, the Scientific Research Council (SRC), the National Commission on Science and Technology (NCST), the Electoral Office of Jamaica (EOJ), and e-Gov Jamaica Limited (e-Gov), formerly Fiscal Services Limited (FSL).

MSTEM has portfolio responsibility for twenty-one (21) agencies and departments spanning the country's science, technology, energy and mining sectors. By virtue of the minister being the Leader of Government Business in the House of Representatives, it has responsibility for and provides support to the Electoral Office of Jamaica (EOJ). This has a direct impact on its structure, mandate, mission and vision, and a broadening of its responsibilities. Consequently, there have been strategic changes compared with the previous year.

The following Ministry Papers provide both an insight into the performance of the Ministry's agencies during the period 2014-2015 and a preview of their focus for the 2015-2016 financial year.

## 2.0 VISION, MISSION AND MANDATE

The Ministry executes its mandate and implements its programmes, projects and strategies through its units, departments, divisions and agencies. These programmes, projects and strategies may be multi-dimensional and their implementation may involve several divisions, agencies and other ministries.

### 2.2.1 VISION

To improve the well-being of all Jamaicans through the leveraging of Science, Technology, Energy and Mining.

### 2.2.2 MISSION

To create an enabling environment for Jamaicans to capitalize on sustainable and secure energy, responsible minerals investments, and a vibrant science, technology, and innovation sector.

### 2.2.3 MANDATE

Based on the subject areas assigned, the ministry's mandate is to:

- i. Encourage innovation in the science, technology, energy and mining sectors.
- ii. Lead legal and regulatory reform of the electricity and gas sectors.
- iii. Promote national energy security, energy efficiency and conservation.
- iv. Promote the diversification of energy sources, including increasing the share of renewables.

- v. Increase investment in the portfolio areas.
- vi. Increased investment in the minerals/metals sector, with particular emphasis on encouraging diversification and value-added development.
- vii. Develop and diversify the minerals sector, including promulgating a modernised minerals policy and revised regulations governing the sector.
- viii. Promote and enable the exploitation of science and technology for innovation and economic development.
- ix. Modernize and streamline government's ICT operations (GovNet and creation of the Single Regulator).
- x. Improve access to Government services, more convenient and efficient use of ICT (e-Gov) through the drafting of legislation to facilitate competitiveness in ICT.
- xi. Increase access to and usage of ICT within all segments of the economy.

### 3.0 STRUCTURE OF THE MINISTRY

The ministry consists of twenty one (21) portfolio agencies, nine internal divisions<sup>1</sup>, and four external units/divisions. The latter are the Mines and Geology Division (MGD), Government Energy Inspectorate (GEI), Post and Telecommunications Department (PTD), and Earthquake Unit or Seismic Research Unit.

The internal divisions are located at the ministry's head office, while the external entities, which are the largest divisions, are located outside the ministry's head office. Both groups of entities, plus the agencies are as follows:

#### 3.1 INTERNAL DIVISIONS AND UNITS

- i. **The Political Directorate comprising the Offices of the Minister and the Minister of State:** These offices are responsible for setting government policies, which are transmitted through the Permanent Secretary.
- ii. **The Permanent Secretary's Office (PSO):** The function of this office is to implement Government of Jamaica (GOJ) policies transmitted through the Minister, Cabinet, Parliament and other responsible organs of the state.
- iii. **Policy, Planning, Development and Evaluation Division (PPDED):** The PPDED provides policy, planning, development and evaluation direction, oversight and support for the Ministry's four major portfolios and has direct responsibility in the oversight of the mining portfolio.

It is responsible for the preparation of the Ministry's Strategic and Operational Plans, preparing Cabinet Submissions and other Cabinet-related documents, coordinating the preparation of the Ministry's annual sectoral presentations,

<sup>1</sup> Excluding the office of the Political Directorate (Minister and Minister of State), and the office of the Permanent Secretary.

procurement management, and monitoring and evaluating the performance of the Ministry and its agencies.

- iv. **Energy Division (ED):** The division has an overall mandate to pursue the roll out of the National Energy Policy 2009-2030, including the development of a modernized legislative framework for the energy sector.
- v. **Information and Communication Technology Division (ICTD):** This division exercises immediate responsibility for the policy direction of the Ministry's information, communication and technology (ICT) portfolio.
- vi. **Finance and Accounts:** The division directs the Ministry's budgetary process, manages its budgetary allocation, and ensures that the Ministry conforms to the requirements of the Financial Audit and Administration Act (FAA Act).
- vii. **Internal Audit (IA):** This division ensures that the Ministry and its agencies are in compliance with the Financial Audit and Administration Act (FAA Act), whereby conducting various types and levels of audits to ensure efficiency and accountability.
- viii. **Human Resource Management and Administration (HRMA):** This division is responsible for the management and development of the Ministry's human resources as well as the administration of the entire Ministry. The areas of responsibility include Personnel, Training, Industrial Relations, Office Management, Registry and Library Services.
- ix. **Communications and Public Relations Unit (CPRU):** This unit develops, coordinates and manages the Ministry's Communication Programme and is responsible for disseminating information to the various publics that interface with the Ministry. The unit is also tasked with coordinating information requirements and outputs of the Ministry.
- x. **Legal Unit (LU):** This entity prepares and monitors legislation to give effect to the policies of the ministry and its agencies, and to assist in providing guidance on legal matters.
- xi. **Information and Communication Technology Unit (ICTD):** This unit is responsible for meeting the ICT needs of the ministry in carrying out its daily information and communication functions including software, programming, email, web page design and updating of the ministry's web site. It is also responsible for the maintenance and monitoring of the information technology system.


### 3.2 EXTERNAL DIVISIONS

- xii. **Mines and Geology Division (MGD):** This division has the legal authority through statute, namely the Mining Act and the Quarries Control Act, to regulate and exercise supervision over all prospecting, mining and quarrying activities and operations throughout the country. It manages the investigation, characterization, documentation and release of information on all aspects of the country's geology and mineral endowment. It is also responsible for the verification and collection of bauxite royalty and quarry taxes.
- xiii. **Government Energy Inspectorate / Electricity Division (GEI/ED):** This entity's current mandate is to ensure that electrical installations in the country are safe and effected consistent with the Jamaica Standards Regulations in accordance with the Electricity Lighting Act. The mandate includes the inspection of petroleum service stations and garages for tanker wagons associated with the petroleum trade.
- The GEI's organizational structure, mandate and mode of operation are slated to change within the 2015-2016 fiscal year. This is in line with the ongoing transformation of the public service and specific attempts to improve the development process.
- xiv. **Seismic (Earthquake) Research Unit (SRU):** Located on the Mona Campus of the University of the West Indies (UWI), and funded jointly by the GOJ and the UWI, this unit serves as Jamaica's hub for earthquake monitoring and research.
- xv. **Post and Telecommunications Department (PTD):** Headed by the Postmaster General and the largest entity within the ministry, this entity's mandate is to provide efficient and cost effective postal and related services to its customers. It operates through a head office and a network of post offices and postal agencies that offer a full range of postal services, including the acceptance and delivery of mail and the sale of postage stamps. It is also a major conduit through which the GOJ channels pensions to pensioners.

### 3.3 AGENCIES

The following, outlined by portfolio, are the agencies for which the Ministry is responsible.

#### SCIENCE

- i.  **International Centre for Environmental and Nuclear Sciences (ICENS):** ICENS is a multi-disciplinary research centre whose work is based largely on applications of the "peaceful uses of the atom". The main programmes at present are in environmental geochemistry and health, with the



overall objective of contributing to the resolution of critical socio-economic problems, including environmental protection and the development and retention of local scientific talent. The major goals of ICENS are to:

- a. conduct multi-disciplinary research related to the environment;
- b. help provide solutions to developmental problems; and
- c. contribute to the growth and retention of a cadre of excellent scientists and technologists.



ii.

**Scientific Research Council (SRC):** Established in 1960, by the Scientific Research Council Act of June 16, 1960, the SRC is mandated to foster the development of scientific research, be a repository of scientific information, and facilitate the development, application and transfer and or the improvement of technology of such research for the benefit of all of Jamaica. It also plays a role as an enabler in the creation of new industries and the encouragement of technical processes on a cooperative basis with all stakeholders involved. The promoting of scientific and technological endeavours is also critical by facilitating training, the implementation of projects, especially in the agro-industrial sector and the conversion of waste to energy.



iii.

**National Commission on Science and Technology (NCST):** Instituted in 1993, the NCST is mandated to enable the society to maximize the benefits to be gained from the strategic uses of science and technology applicable to the national, social and economic developmental goals of Jamaica. Chaired by the Prime Minister, the Commission envisions that by 2015, the culture of science and technology will be widespread across the country and be utilized to maintain food security, to enhance agricultural practices, for natural resources exploitation, a profitable and competitive business environment, wealth creation and education of the populace to be scientifically and technologically capable and competent. To accomplish these undertakings, the NCST collaborates and dialogues with members from the academia, the private and public sectors to coordinate monitor and implement science and technology policies that will drive the country's developmental. Acting as an advisory body to the Government, the NCST uses its secretariat/steering committee to guide research, provide science and technology policy advice and information, and the

organization of resources of the scientific community to improve the lives of Jamaicans.

## INFORMATION AND COMMUNICATIONS TECHNOLOGY



iv.

On January 12, 2013 Cabinet gave approval for the repositioning of Fiscal Services Limited (FSL) as the entity tasked with implementing Information and Communications Technology (ICT) projects across the Government of Jamaica (GOJ). Arising from the decision, the entity's name was changed to e-Gov Jamaica Limited (e-Gov), and was transferred from the Ministry of Finance & Planning (MOFP) to the Ministry of Science, Technology, Energy and Mining (MSTEM).

e-Gov will continue to place high priority on providing the necessary support to the revenue departments, namely, Jamaica Tax Administration (JTA) and the Jamaica Customs and be the major link in the information flow among these departments throughout the country. At the macro level, e-Gov will place particular focus on the following priority policy areas:

- a. Reduce the GOJ's ICT cost;
- b. Promote efficiency and effectiveness in government through technology;
- c. Facilitate a more responsive Public Sector; and
- d. Promote national growth and development.

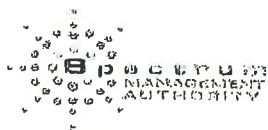


v.

**E-Learning Company Jamaica Limited (E-L Jam):** Established by Cabinet's decision, E-L Jam was incorporated on July 6, 2005 as a limited liability company and carries out its mandate with funding from the Universal Service Fund (USF). E-L Jam is an electronic learning initiative with the main objectives of facilitating web-based and computer-based learning and virtual classrooms utilizing information and communications technology (ICT). The E-Learning Project, in collaboration with the Ministry of Education (MOE), targets students at the secondary level with applications and processes of an electronic nature geared towards the improvement of performance at the CXC/CSEC examinations.



- vi. The Postal Corporation of Jamaica Ltd. **Postal Corporation of Jamaica (PostCorp):** This entity was formed to be a transition company to commercialize and modernize the postal service as certain modernization initiatives could not be implemented within the legislative framework of the PTD. Its Chief Executive Officer is the Postmaster General. The plan is to promulgate a new Postal Services Bill which will result in the creation of a new statutory corporation to be known as "Jamaica Post", which will assume the functions of the PTD and PostCorp. Subsequently, the PTD and PostCorp will be dissolved.



- vii. **Spectrum Management Authority Limited (SMA):** A limited liability company which commenced operations in April 2001, the SMA was incorporated in accordance with section 21 of the Telecommunications Act, 2000 and the Radio and Telegraph Act, 1973, to advise the minister on matters directed by him and on functions delegated by the said minister. In its mandate as the independent regulatory body to oversee the radio frequency spectrum, SMA authorizes licenses to operators, collects fees from users of the radio frequency, safeguards the maintenance of frequency bands from unauthorized interference and protects the rights of the spectrum operators. The SMA's major role is to monitor and promote the growth and development of the spectrum in accordance with the International Telecommunications Union's (ITU's) rules and regulations.



- viii. **Universal Service Fund (USF):** In 2012, the Universal Service Fund (USF) replaced and assumed the responsibility of the Universal Access Fund Company Limited (UAF), which was established in 2005 with the main objective of collecting and managing the service levy from companies operating in the local telecommunications sector, on international calls terminating in Jamaica. Its mandate had its genesis with the Telecommunications Act, 2000 and was a subsidiary of Spectrum Management Authority (SMA) Limited.

The USF is a statutory entity geared at facilitating the provision of universal access to the information superhighway by accelerating the deployment of

broadband services island-wide. The USF also covers the collection of universal service obligation (USO) levy and funding for the E-Learning Project.

## ENERGY PORTFOLIO

ix. **Board of Examiners (BOE):** The Board of Examiners (BOE) is an independent body mandated under the Electric Lighting Act to, inter alia, conduct examination of persons who wish to engage in certain electrical related activities, issue electrician licenses to suitable individuals and to maintain a roll of all licensed electricians in the country. The BOE works closely with the Government Energy Inspectorate (GEI).

x.  Petroleum Corporation of Jamaica

**Petroleum Corporation of Jamaica (PCJ):** The Petroleum Corporation of Jamaica (PCJ) was formed in June 1977, and is empowered by the Petroleum Act of 1979, to pursue the development of Jamaica's energy resources with exclusive rights to explore for oil and develop Jamaica's petroleum resources. The entity initially was mandated to explore for oil and gas along with the procurement of refining, retailing and distribution of petroleum products. The mandate was later expanded in 1995 to include the development of indigenous renewable energy resources and extended to be a main entity in implementing the National Energy Policy 2009-2030. The PCJ holds equity in a number of entities which also carry out this mandate. These include PETROJAM, PETROJAM Ethanol, Petroleum Company of Jamaica (PETCOM) and Wigton Wind Farm Limited (WWF).

xi.



**Petroleum Company of Jamaica (PETCOM):** A subsidiary of the PCJ, PETCOM markets petroleum and petro-chemical products to industrial, commercial, institutions and residential customers through its bulk and retail outlets and network of service stations and filling plants. PETCOM buys most of its products from PETROJAM Limited.

PETCOM's mission is to be responsive to customers' needs, being profitable in operations and socially responsible while also endeavouring to implement positive changes within the petroleum trade. The company has been ear-marked for divestment.



xii. **PETROJAM Limited (PETROJAM):** This entity, a subsidiary of the PCJ and 49% owned by the Government of Venezuela, manages Jamaica's sole oil refinery. The refinery is currently a 36,000 barrel per day hydro-skimming plant.

PETROJAM imports crude, mainly from Venezuela and Mexico, which it converts to various products, including Liquid Petroleum Gas (LPG), ten per cent Ethanol-blended (E10) Gasoline, Kerosene, Turbo Fuels, Auto Diesel Fuel Oil and asphalt. The refinery's operations are below capacity mainly because of its size and configuration. It is constrained by the number of barrels it can process, the quality and the kinds of value added products which it is unable to produce. These constraints are to be addressed by the proposed Refinery Upgrade Project (RUP), under which its capacity is to be increased to 50,000 barrels per day and improve its ability to produce a larger volume and range of value-added products.

xiii. **Jamaica Aircraft Refuelling Services Limited (JARS):**

A subsidiary of PETROJAM, the Jamaica Aircraft Refuelling Services Limited (JARS) was created in 1999 as a joint venture between PETROJAM, and British-based aviation fuel marketing company, Air BP to supply turbo fuel directly to aircraft and airline customers at the country's two international airports.



xiv. **PETROJAM Ethanol Limited (PEL):** A subsidiary of PETROJAM Limited, PEL operates a 41.8 million US gallons per year ethanol plant and is a main player in the ethanol market. The company is primarily involved in the procurement of hydrous ethanol feedstock, its dehydration, and the provision of ethanol to PETROJAM for the blending of E-10 gasoline and the exporting of fuel ethanol to the United States under the Caribbean Basin Economy Recovery Act, 1983. Under the Act, PEL is eligible for duty exemption in the supply of fuel grade ethanol to the U.S.A under a quota which changes annually for eligible countries.

Since 2009 the regional ethanol market has experienced a major downturn owing to changes to the Caribbean Basin Economy Recovery Act, 1983. This has resulted in Brazil being able to sell ethanol directly into the US market without the need for third party entities such as PEL. Consequently, PEL's profitability has declined and its major business outside of supplying ethanol to PETROJAM has become the tolling of ethanol (i.e. the processing of ethanol for third parties).



xv.

**Wigton Windfarm Limited (WWF):** Incorporated in April 2000, this company is a wholly owned subsidiary of the PCJ. Its objectives are to diversify and develop renewable energy sources through identifying and conducting studies of potential sites for wind and solar energy solutions. The company operates a 38.5 MW wind farm from which it sells electricity to the Jamaica Public Service Company (JPSCo) under an executed power purchase agreement (PPA). The company is proposing to add a further 24 MW of generation capacity during the 2013-2016 planning cycle. This would increase its installed capacity to 62.5 MW.



xvi.

**Rural Electrification Programme Limited (REP):** Incorporated in 1975, the REP was originally mandated to provide electricity supply services to rural communities where the provision of the utility would not normally be financially viable to a conventional commercial electricity retailer. Its operations include the construction of electrical distribution pole lines in non-electrified areas and the provision of house wiring assistance to householders in identified communities. As of March 2009 more than 94% of the country had access to electricity.

The entity's mandate, which was expanded over ten years ago to include the provision of electricity to poor urban communities, has been further widened to assist the JPSCo to regularize electricity services in poor urban communities and to effect the government's energy efficiency, energy conservation and wider energy solutions agenda nationally.

The REP is slated to be renamed and rebranded the National Energy Solutions Limited (NESol) during the 2015-2016 fiscal year. The rationale for the change is associated with the following factors:

- i. Having successfully completed 97.5% electrification of rural communities, the REP has recognized the need to diversify its activities in light of changing market demands and developments within the local and international energy markets.
- ii. Recent and ongoing geo-political developments, the increasing commercial attractiveness of various renewable energy sources and technologies, and environmental concerns have led to growing demand

for renewable energy sources such as solar, which is in abundant supply in Jamaica.

- iii. Fiscal constraints continue to impact adversely on the magnitude of funds that can be made available to the REP. Rebranding provides the REP with the opportunity to expand its revenue streams through the pursuit of a number of new strategic initiatives encompassing energy audits, conventional electrical infrastructure for new housing developments and renewable energy solutions for governmental and private sector stakeholders.

## MINING



- xvii. **Clarendon Alumina Production Limited (CAP):** Incorporated in 1985. Clarendon Alumina Production Limited (CAP) executed a joint venture called **JAMALCO**, with General Alumina Jamaica LLC (GAJ), a company owned 100% by General Alumina Holdings Limited (GAJ), which is owned 100% by Noble Group (SGX:N21). Prior to January 16, 2015, General Alumina Jamaica operated under the name ALCOA Minerals of Jamaica (AMJ), a company owned until December 1, 2014 (when it was acquired by Noble Group through GAJ), by ALCOA World Alumina LLC, and ALCOA Caribbean Holding, LLC, collectively called AWA (60% ALCOA and 40% Alumina Limited formerly Western Mining Corporation Australia).

Through a Board of Management, CAP participates in the management of the JAMALCO alumina refinery and related works by initiating, executing and monitoring the company's plans and programmes.



- xviii. **Jamaica Bauxite Institute Limited (JBI):** Established in 1975, the JBI is a regulatory, planning, research and development company, with responsibility to facilitate the development of the Bauxite and Alumina Sector, research, gather and evaluate information on and monitor all aspects of the sector, including mineral exploration, environmental impact, industrial relations and fiscal matters. Through the Bauxite Community Development Programme (BCDC), a collaborative effort with bauxite and alumina companies and community councils, JBI implements programmes that reinvest part of the GOJ's earnings in communities affected by its operations. This takes the form of long-term sustainable income-generating, physical and social infrastructure projects.

- xix. **Jamaica Bauxite Mining Limited (JBM):** Incorporated in 1975, JBM was mandated to administer the GOJ's equity in the Bauxite and Alumina Sector. It currently owns 51% of the assets in Noranda Jamaica Bauxite Partners (NJBIP), formerly St. Ann Jamaica Bauxite Partners (SAJBP). The JBM also holds the GOJ's 7% equity in the WINDALCO Joint Venture, and 100% of the former Reynolds Operations at Lydford, St. Ann. Its key function is to ensure that the business processes at NJBP, WINDALCO and Lydford deliver economic value and maximize overall returns on GOJ's investments in the Bauxite and Alumina Sector.

**Seismic (Earthquake) Research Unit (SRU):** Located on the Mona Campus of the University of the West Indies (UWI), and funded jointly by the GOJ and the UWI, this unit serves as Jamaica's hub for earthquake monitoring and research.

#### ELECTORAL MATTERS

- xx. **Electoral Office of Jamaica (EOJ):** This entity is responsible for planning national and parochial elections in Jamaica.

The EOJ and the Electoral Commission of Jamaica (ECJ) are associated with the Ministry of Science, Technology, Energy and Mining (MSTEM) by virtue of the Minister being the Leader of Government Business in the House of Representatives.



# LIST OF MINISTRY PAPERS

# SCIENCE

PERFORMANCE OF THE INTERNATIONAL CENTRE FOR ENVIRONMENTAL  
AND NUCLEAR SCIENCES (ICENS) FOR FINANCIAL YEAR 2014/2015 AND  
PRIORITY FOCUS FOR FINANCIAL YEAR 2015/2016

### 1.0 PURPOSE OF MINISTRY PAPER

This Ministry Paper is intended to inform Parliament and the public on the performance of ICENS during the 2014/2015 Financial Year and its focus for the 2015/2016 Financial Year.

### 2.0 MISSION

To enhance the quality of life in Jamaica by maintaining:

- An accessible scientific information baseline for the environment.
- Interdisciplinary Science, Technology and Innovation (STI) capabilities.
- Chemical analysis of environmental media and foodstuff using nuclear and atomic spectroscopic methods.
- Radiation monitoring of personnel and the national and regional environment.
- Training of local scientists in state of the art technologies.

### 3.0 BACKGROUND

ICENS carries out targeted multidisciplinary research investigations of the chain:  
bedrock ► soil ► plants and animals ► people

It does this by a process of:

- In-house analysis of the environmental geochemistry of rocks, soils, plants, animals and pollution and its effect on agriculture, foodstuffs and human health, using applied nuclear sciences and advanced laboratory instrumentation.
- Storing the analytical data in an in-house data repository and transforming it into multidimensional information and visualisations utilizing GIS.
- Sharing interpretations and visualisations by public online access and providing high-level decision makers with options for policy and positive action.

ICENS also:

- Provides radiation protection services to over 1300 clients in hospitals, clinics and laboratories in the CARICOM region and radiation monitoring services and advice for the Port Authority of Jamaica.
- Uses its Slowpoke research reactor as a source for neutron activation analysis (NAA) and for scoping the future uses of peaceful uses of nuclear energy and peripheral technologies in Jamaica.

#### **4.0 THE GLOBAL AND LOCAL ENVIRONMENT**

The current global and local economic environment imposes cash constraints on ICENS which require stringent financial management.

#### **5.0 ROLE AND FUNCTIONS**

See details in 3.0 above.

#### **6.0 PRIORITY TARGETS/OBJECTIVES AND BUDGETARY ALLOCATION FOR FINANCIAL YEAR 2014/2015**

- A new online Jamaica Geological Map and a Jamaica Mineral Information Point (MIP) database done in collaboration with Mines and Geology Division and UWI Geology to attract new investors to develop the national minerals industry was completed in November 2014. The web site can be viewed at <http://portal.onegeology.org/>
- Completed project for "the use of pozzolan for low-cost road repairs in Jamaica" done by Professor Claise of Coventry University, United Kingdom for a budgetary allocation of J\$6.8 M. The project however did not generate the results expected.

##### **6.1 Among the matters of priority were:**

- Assisted with the drafting of the new Radiation Law. The comments from stakeholders are now being converted to drafting instructions which will be sent to the Office of the Chief Parliamentary Counsel (CPC) in short order.

#### **7.0 PERFORMANCE/ACHIEVEMENT - FINANCIAL YEAR 2014/2015**

7.1 The achievements for the Financial Year 2014/2015 are as follows:

- Completed 60-70% of the documentation required by United States Department of Energy ("US DOE") as a pre-condition for the Slowpoke Reactor core conversion (see 9.1 below).
- Received approval from the US DOE for funding an upgrade of the security systems at ICEN for US\$30,000. Installation of closed circuit cameras and other technological devices is now underway.
- Provided practical advice regarding establishment of a Jamaican nuclear regulatory body.
- Act as Jamaican national partner in US DOE Megaports Initiative for monitoring and detecting illegal radioactive material in container traffic through Kingston Port Authority.

**TABLE 1: FINANCIAL RESULTS FOR APRIL 2014 TO MARCH 2015**

PARTICULARS	APPROVED BUDGET (\$'000)	REVISED ESTIMATES (\$'000)
Compensation of employees, travel expenses and subsistence	66,271.00	62,232.00
Public utility services	684.00	850.00
Purchase of other goods and services	8,868.00	8,897.00
Grants and contributions	0.00	0.00
Purchases of equipment	3,000.00	3,240.00
<b>TOTAL</b>	<b>78,823.00</b>	<b>79,219.00</b>

## 8.0 MEDIUM TO LONG TERM FOCUS

- Upgrading ICENS laboratory facility and instrumentation over a two year period 2016 - 2018 at a cost of €1.4M to be funded by the International Atomic Energy Agency (IAEA). This will improve both the range and number of scientific research and services provided.
- Continuation of the expansion of ICENS information base for on-going geochemical analysis of potentially toxic trace metals entering the Jamaican food chain through plants and animals.
- Geochemical surveys to fill information gaps in soil chemistry and mineral exploration maps of Jamaica depicting geochemical results on a 3D terrain model of Jamaica for ease of reference.
- Broadening ICENS international S&T base by attracting more visiting experts on fellowships and work attachments.

## 9.0 PROGRAMMES AND TARGETS FOR FINANCIAL YEAR 2015/2016

- 9.1 Completion of ICENS Slowpoke reactor core conversion by September 30, 2015. This conversion consists of a change from weapons grade uranium to low-enriched uranium at a cost of US\$8.0M which is fully funded by the United States.

Completion by October 2015 of a joint research with the Chongquin Institute of Green and Intelligent Technologies into "The use of Biochar and Phyto-mimics to remediate cadmium in soils".

9.2 *Environment*

- Regional IAEA project "Cradle to Grave" for the control of Radioactive Sources to commence January 2016 to be fully funded by the IAEA for €1M.

9.3 *Other Initiatives*

- Proposal done for a new project "Air Quality and Climate Change in Jamaica and Namibia". A request was made to several agencies for €630,000.
- Training of university students in field and laboratory research methods through summer 2015 projects.

10.0 BUDGETARY PROPOSAL FOR FINANCIAL YEAR 2015/2016

The budgetary proposal for the Financial Year 2015/2016 is approximately the amount shown and funds will be allocated as follows:

PURPOSE	BUDGETED (\$'000)
Compensation of employees, travel expenses and subsistence	63,852.00
Public utility services	519.00
Purchase of other goods and services	6,995.00
Grants and contributions	0.00
Purchases of equipment	500.00
<b>TOTAL</b>	<b>71,866.00</b>



Phillip Paulwell  
Minister

Science, Technology, Energy and Mining  
April 13, 2015

PERFORMANCE OF THE NATIONAL COMMISSION ON SCIENCE AND TECHNOLOGY (NCST) FOR FINANCIAL YEAR 2014/2015 AND PRIORITY FOCUS FOR FINANCIAL YEAR 2015/2016

**1.0 PURPOSE OF MINISTRY PAPER**

The purpose of this Ministry Paper is to present information on the performance of the National Commission on Science and Technology (NCST) for fiscal year 2014 - 2015.

**2.0 ROLE AND FUNCTION OF THE NCST**

The Mission Statement and Strategic Objectives outline the role and function of the NCST.

**2.1 Mission Statement**

To facilitate the formation of strategic partnerships towards advancing the implementation of the national science, technology and innovation (ST &I) policy and playing a fundamental role in the creation of wealth and improving the quality of life for Jamaicans.

**2.2 Strategic Objectives**

- I. To build awareness of the relevance and importance of scientific and technological innovation in Jamaica's growth and development.
- II. To contribute to Jamaica's sustainable development by creating an enabling environment that facilitates the building of its ST&I capacity.

**3.0 PERFORMANCE HIGHLIGHTS FOR 2014/2015**

The NCST was officially launched by the Prime Minister on October 29, 2014 following its reconstitution on June 1, 2014 after being inoperative for a few years. Since its resurgence it has been directly involved in coordinating several strategic initiatives to push the application of science, technology and innovation to the forefront of Jamaica's development. Regardless of the stringencies of the fiscal space, the Commission will employ prudent fiscal management to effect its mandates. The last quarter of 2014 saw the Commission undertaking the following initiatives:

**The Establishment of the National Nutraceutical Industry (NNI)**

With a mandate from the Prime Minister to develop a national industry, the essence of which is to embrace the cultural science and technology surrounding our healing plants and waters. The industry will require inter alia an amendment to the Food and Drug Act 1964 under the Ministry of Health to incorporate the classification and registration of nutraceutical products. The planning continues regarding the institution of a framework that will monitor and regulate products, persons and facilities to ensure adherence to national and international industry best practices and standards.

Through 2015/2016 FY the NNI Steering committee will continue to effect the changes and institutional requirements for the development of the industry.

### **Popularization of Science and Technology**

Science, Technology and Innovation (ST&I) are important factors that are key to the improvement of the economy and the quality of life for our nation. Therefore, it is important that there be an integration of ST&I into all aspects of society belief and value systems. The popularization of science and technology is critical to developing a culture of S&T in which the application of science in everyday life and industry are second nature. The NCST was integral to the facilitation of the following popularization initiatives:

#### **A. Science and Technology (S&T) Month**

The NCST has had continued collaboration with the Scientific Research Council (SRC) and other partners in executing key activities within the month of November which is celebrated each year as S&T month. The month long activities are aimed at promoting the application of ST&I as a tool for national development and growth towards achieving the country's vision. The NCST major collaborative focus included but not limited to:

##### **I. National Medal for Science and Technology & Innovation Awards**

This special award was granted to Dr. the Hon. Henry I.C. Lowe, OJ by the Prime Minister for his outstanding contribution to scientific research, its development and application in Jamaica. The next recipient will be granted in 2016.

##### **II. National Innovation Awards**

With the support of major sponsors, Petrojam, PCJ, LIME, PetroCaribe, NFDST, Sagicor and JPSCo, eleven awards were presented in the categories of Energy, Engineering & Manufacturing, Health & Safety, ICT, Education & Popularization of ST&I, Environmental Sustainability, Agriculture, Food & Agro-processing, Youth Innovator and Other. Mr. Harlo Mayne of Maynex Technology Limited was the 2014 winner of the Youth Innovator Award.

##### **III. Venture Support**

As a spin-off to the National Innovation Awards, the NCST brought together the top innovators with potential capital support. This provided meaningful exposure and a push towards commercialization of their ideas and application. Work is set to continue to garner support to provide funds

##### **IV. Science in the Park**

A collaborative effort with the SRC that brought together members of the general public, science community, private and public sector entities, government ministries, representatives of the Diplomatic Corps, students and educators. There were over 40 exhibits that provided information for businesses, for students and for the general public. The exhibits showcased the latest technologies being used in the various sectors



such as health, education, security, agriculture, communication and transportation. The work of local inventors and innovators coming out of the National Medal for Science and Technology and Innovation Awards, 2014 were also on display.

Whilst, the populace has to be sensitized on the relevance of ST&I, particular emphasis has to be placed on encouraging the youth to innovate and recognise the relevance of ST&I to their future career development. NCST anticipates that this and similar initiatives will serve to stimulate an enabling environment for innovation, entrepreneurship and wealth creation.

#### **Technology Investment Fund**

Established through the National Foundation for Development of Science and Technology (NFDST), the Technology Investment Fund operates somewhat like a "venture capital" providing sponsorship for ST&I projects which would not meet the criteria for funding normally applied by commercial/development banks. There is need to resuscitate and inject funds in order to facilitate any reasonable contribution to the demands being made by local innovators and those looking to use ST&I as a critical tool to develop their businesses and ideas. Much of the support needed by local innovators is to access funds to expand, file patents, R&D and start-up capital. Two applications were made to TIF and both were granted support.

#### **Biosafety Clearing-House**

To facilitate exchange and integration of information on the island's biosafety activities and to promote and facilitate scientific and technical cooperation in keeping with Jamaica's obligations under the Convention on Biological Diversity, the NCST continued to participate in the execution of the UNEP/GEF-funded Biosafety Clearing-House (BCH) Project which is being implemented by the Natural History Division of the Institute of Jamaica, the designated BCH Focal Point.

### **4.0 MEDIUM TO LONGTERM FOCUS 2015-2018**

#### **Rationalization of S&T Institutions**

- The government of Jamaica is the main funder of research and development (R&D). In an effort to encourage greater levels of investment and maximise return on investments it is important to re-evaluate the creative and dynamic potential of our R&D institutions in meeting local needs and building a competitive edge in a rapidly advancing technological world.
- With respect to the implementation of the ST&I roadmap strategy, the NCST in collaboration with the Public Sector Transformation Unit (PSTU) will be facilitating an audit of the government laboratories in and around the Hope Gardens Complex. This is with a view to empower the institutions and address optimum use of space, equipment and personnel. Downstream this could coalesce and result in the establishment of the infrastructure for a science and

technology and innovation park. Strategically, there will be a revision of the Acts governing the establishment of each institution with a view to provide a sense of the level of responsiveness to meeting the changing needs locally.

#### **Monitoring of S&T Indicators**

- RICYT Technical Assistance - The NCST will be involved in a technical assistance programme carried out by the Network for Science and Technology Indicators - Ibero-American and Inter-American (RICYT) which aims at developing indicators regarding the financial and human resources devoted to research and development (R&D) in both private and public sectors. The broader objective of this initiative is to strengthen Jamaica's capacity in the construction of statistical information about science and technology and establish a platform for systematic data transfer and continuity in relevant areas impacting on S&T so as to be able to measure progress and provide assessment on GOJ spending.

#### **ST&I Policy Development**

- Lead the development of the new ST& I policy entrenched in Vision 2030 with support of PIOJ and other key stakeholders. The policy will seek to connect the variety of entities and their activities towards a more coordinated approach with more defined mechanisms for mobilizing human, financial, and institutional resources.

#### **POPULARIZATION OF S&T**

- Develop and execute a public awareness campaign that will continue as a part of wider efforts to deeply entrench a culture of science, technology, innovation and entrepreneurship in all aspects of society.



Phillip Paulwell  
Minister

Science, Technology, Energy and Mining  
April 13, 2015

**PERFORMANCE OF THE SCIENTIFIC RESEARCH COUNCIL (SRC) FOR  
FINANCIAL YEAR 2014/2015 AND PRIORITY FOCUS FOR FINANCIAL YEAR  
2015/2016**

**1.0 PURPOSE OF MINISTRY PAPER**

This Ministry Paper is intended to inform Parliament and the public on the performance of the Scientific Research Council (SRC) during the 2014/2015 Financial Year and its targets for the 2015/2016 Financial Year.

**2.0 MISSION**

The Mission of the SRC is to serve the productive sector, policy makers and the general public to enable sustainable development in Jamaica by:

- a. Providing quality scientific and technological solutions (product/process research and development, policy advice and facilitating technology transfer);
- b. Popularising science and technology through strategic alliances; and
- c. Being customer-focused, with innovative, competent and responsive teams.

**3.0 BACKGROUND**

The Jamaican government through the Minister of Science, Technology, Energy and Mining (MSTEM) has mandated the Scientific Research Council (SRC) to contribute to economic growth through the application of Science, Technology and Innovation (STI). The Minister in his charge to the Board of Directors at their first meeting held in April 2012 spoke to the need for growth of the Jamaican economy moving from primary producers to value-addition; and a more efficient business sector through the use of technology and innovation. The SRC has been mandated to prioritise along the focus areas of: Energy; Agro-processing/Agri-business; Innovation; and Wastewater Treatment.

**4.0 ROLE AND FUNCTIONS**

The SRC was established by an Act of Parliament in 1960, with subsequent modifications to operating procedures.

The Council seeks to contribute to economic growth by broadening the country's industrial base in a manner that focuses on the use of local resources. The SRC also provides technical support to existing industries to enhance their performance in increasingly competitive domestic and international markets. To that end, the Council is involved in:

- a. Development of new and improved marketable Jamaican value-added products, as well as the commercialisation and subsequent sale of products and technologies based on local raw materials, with the objective of reducing risks to entrepreneurs.

- b. Provision of Science and Technology (S&T) information in general and increasing public awareness of the relevance of S&T to national development.
- c. Introduction of advanced agricultural and agro-processing technologies to enhance productivity in selected sectors and the provision of technical support, training, and transfer of technology to the agro-industrial sector.
- d. Provision of technical support, training and advice for the management and optimisation of waste in several sectors, including tourism.
- e. Planning, implementation and management through national projects and committees of Government agencies and economic management of important local resources in a sustainable manner, through partnership with local communities.
- f. Facilitation and encouragement of the development of a national innovation system.

## 5.0 PRIORITY POLICY ISSUES

The SRC is guided by the National Development Plan (Vision 2030).

## 6.0 PERFORMANCE/ACHIEVEMENT - FINANCIAL YEAR 2013/2014

6.1 The achievements for the Financial Year 2013/2014 are as follows:

### Priority Area 1: Energy and the use of renewable resources

1. Research on feedstock in Jamaica brought into focus the large loads of effluent generated by sugar producers, indicating their need for wastewater treatment services, which would result in the generation of renewable energy. The SRC has been targeting this sector and will continue to do so in the new financial year.

A special wastewater forum was held in Kingston at which scientists and engineers shared information on environmentally friendly wastewater technologies and how they can reduce energy costs. In addition, a series of presentations on Wastewater Management was done at the St Elizabeth and the Manchester Parish Councils in a bid to sensitize and inform the Councils and by extension the respective communities on the topic. The SRC also participated in the Caribbean Water and Wastewater Conference (CWWA) in Barbados promoting SRC's wastewater treatment technologies and services in the region.

2. Over 17 feasibility studies were completed for implementation of environmentally friendly and energy-generating wastewater treatment systems for clients across the island.
3. Construction of wastewater treatment systems continued throughout the year. At present, construction of ten systems are being monitored for the Ministry of Agriculture under the Sugar Transformation Programme at six housing development complexes in the parishes of Westmoreland, Trelawny, St Thomas and Clarendon. Eleven additional units are at various stages of completion or

commissioning for clients across the island. These include residential, agricultural and food processing establishments.

4. Final approval by Cabinet and a letter of Intent were received from the Ministry of Health for the implementation of wastewater treatment systems for fourteen hospitals across the island. Limited tendering for execution of six projects was done in March 2014. This will be a major project for the SRC in the new financial year.
5. The SRC provided consultancy in wastewater treatment options to Petrojam and continued with sampling and analysis of wastewater effluents for two companies in St James in fulfilment of NEPA's Permit and License.
6. Three regional energy information platforms, Caribbean Information Platform on Renewable Energy (CIPORE), Caribbean Environment and Business Information Platform (CEEBIP) and Caribbean Information Platform on Petroleum (CIPPET), were updated and maintained with information on regional energy data, directories of projects, expertise, companies, news, success stories and events. Issues of petroleum data, sustainable energy development news and information on energy for young minds are available on the respective websites. These energy platforms will also be linked to the MSTEM's new website which will be launched soon. The Caribbean Energy Information Systems also made representations at meetings including the Renewable Energy and Energy Efficiency Technical Assistance (REETA) Project in Guyana; the Katalyxt's Round Table Talk, UWI Regional Headquarters; and the Japan-Jamaica Smart Energy Symposium
7. Following successful application and negotiations, the Caribbean Climate Innovation Centre (CCIC) was launched in January 2014. The CCIC is being managed by a consortium of the SRC in Jamaica and the Caribbean Industrial Research Centre (CARIRI) in Trinidad and Tobago; and overseen by a management Committee. CCIC was developed under a global partnership program InfoDev within the World Bank and received an initial grant by the World Bank's Development Grant Facility (DGF). The objective of the CCIC is to establish regional institutional capacity that will support Caribbean entrepreneurs and new ventures involved in developing locally-appropriate solutions to climate change mitigation and adaptation. Through its programs, activities and financing, the CCIC and its network of partners and stakeholders will provide a regionally-driven approach to solving climate, energy and resource challenges and support economic development through job creation. The program will provide targeted support, mentoring, training and funding facilitation to approximately 80 companies in the region.

## **Priority Area 2: Agri-business and agriculture, nutraceuticals and food**

### **1. Wellness Industry:**

- a. Over 40 client requests were received for assistance in development of products for the wellness industry. Of this 17 contracts were signed and product development work completed or nearing completion.
- b. Workshops on production of cosmetics (body washes and lotions) respectively were held throughout the year, at which an average of 15 persons attended
- c. The SRC continued development of herbal teas including studies on their antioxidant properties, sensory evaluation and toxicity.
- d. R&D continued on the anti-denaturation (Anti-inflammatory) properties of 17 plant extracts (screened to complete the 100 plants) using Bovine serum albumin.
- e. Studies on the levels of dibenzyl trisulphide (DTS)<sup>1</sup> in wild and tissue cultured guinea hen weed continued.
- f. Insecticidal activity studies on Natural Commercial Pesticide - currently conducting field trials using prepared formulation on an experimental plot of callaloo on SRC grounds; plants are treated every seven days.

## 2. Food Industry:

- a. An average of 11 clients utilized the Food Pilot Plant each month for production activities. This is a growing area within the food sector where micro and small businesses can access food processing facilities and know-how at affordable prices.
- b. Technical assistance was provided to an average of eight clients per month in various food processing activities. This included milling and drying, meat processing and packaging.
- c. As a competent authority in thermal processing in Jamaica, the SRC assisted food processing facilities in Vent Scheduling and Schedule Processing; Retort Inspection and Food and Drug Administration (FDA) filing.
- d. Over 16 new product development contracts were signed in the period from over 90 requests received from which prototypes were developed and accepted by potential or existing food processors.
- e. Over seven food formulations were sold and over 50 Nutritional Fact Panels were also generated to satisfy client requests.

## 3. Biotechnology (Tissue Culture):

- a. Research continued on the International Atomic Energy Agency (IAEA) funded plant breeding project earmarked to develop disease resistant and drought tolerant varieties of ginger and sweet yam; in collaboration with Bodles Research Station for field testing.
- b. Competencies in molecular characterisation continued to be developed.
- c. Under contract, plantlets of the Jamaican varieties of ginger were delivered to the Export Division, Ministry of Agriculture. Multiplication of food crops and

<sup>1</sup> DTS is a signal transduction polysulfide secondary metabolite isolated from *Petiveria alliacea* (Guinea Hen Weed). It is one of seven members of the Jamaican phytolaccaceae. Teas and extracts from P have been used for the treatment of various forms of diseases including cancers.

ornamentals was also completed for other clients including cassava plantlets to CARDI; and initiation and multiplication of FHIA varieties for the Banana Board.

- d. A gene bank of economically important food crops and ornamentals was maintained.
- e. Initiation protocols are being developed for organic ginger and turmeric.

#### 4. Analytical Services

- a. The SRC received and completed testing of over 3,500 water, wastewater and food samples.

### Priority Area 3: Innovation

1. Training, Seminars, Workshops
  - a. Webinars was used as an affordable medium to provide training to research staff.
  - b. The SRC provided training in various aspects of food processing to over 35 undergrad students, 12 postgrad students and nine supervisors of UWI; 18 students and one lecturer from U-Tech; and 25 students and two lecturers from Mico University College.
  - c. Sauce Processing Workshop was held in March 2014.
2. An interactive Tissue Culture guide complete with videos, hands on quizzes, question and answer is in the progress of being developed.
3. Development and deployment of online systems for leave application and lunch orders.
4. Electronic-version of the Jamaican Journal of Science and Technology (JJST) published.

### Priority Area 4: Information and Communications Technology

1. Requests for S&T Information
  - An average of twenty-five requests for S&T information in various subject areas were requested of the Documentation Centre each month. These were satisfied at a rate of at least 85% within two days.
  - As the focal point for the S&T information Network (STIN), a workshop was held for the members that focused on "Using Social Media for Information Exchange". A STIN Webpage was also launched.
  - Development of a journals database which will make for easier retrieval of current publications.
2. Infrastructure Improvement
  - Establishment of an Intranet system at SRC.
  - Development of a Client Management System for the Analytical Services Department.
  - Expanded use of an e-tracking system for customer requests.

### Priority Area 5: S&T Promotion

- In its drive to increase awareness and appreciation of the importance of science technology and innovation in Jamaica, the SRC held several activities throughout the year and in November 2013.. November being S&T month an Opportunity Fair was held under the theme: "Endless Opportunities and Limitless Possibilities" at which 26 organizations participated in various forms. A market study on the, sauce, jams and jellies market was completed and the findings presented at the Fair.
- Several articles were published in the print media on S&T related topics. The SRC participated in radio interviews, TV exposures; print and radio advertisements.
- The SRC facebook page was updated daily to provide information to the public on the Council.
- Based on monthly Feedback Forms, responses indicated that the majority of persons heard about SRC through word of mouth/referrals; radio; exhibitions; facebook; and SRC's website.
- During S&T Month the following are some of the highlights of activities:
  - SRC conducted Juice Processing training for youths of the Jacques Road community and facilitated a tour of the Pilot Plant for approximately 40 students from Mona Preparatory School and 22 adults & children from JCDC respectively.
  - SRC participated in an exhibition at the Old Harbour Development Area Committee (OHDAC) annual Expo.
  - 18 SRC staff members visited two (2) renewable energy plants, namely the JPS Constant Spring Hydroelectric Plant in St. Andrew and Wigton Wind Farm in Manchester.

### 7.0 PROGRAMMES AND TARGETS FOR FINANCIAL YEAR 2015-2016

In light of the prevailing economic constraints, the SRC will continue to prioritise income generating, cost reduction and increased efficiency activities. Focus will be placed on completion of existing contracts in product research and development, wastewater, energy and externally funded projects.

In response to the growing demand for disease-free planning materials e.g. ginger, the SRC will improve capabilities and efficiencies in meeting this demand. In addition, new tests in analytical services will be included in our portfolio of accredited services to customers.

The following outlines the specific activities in line with our strategic objectives for the financial year 2014-2015:

#### IMPROVING INTERNAL CAPABILITIES AND EFFICIENCIES

1. Maintenance of ISO 9001:2008 certification of quality management system and ISO/IEC 17025:2005 accreditation of analytical laboratories.

#### INCREASED CUSTOMER PRODUCTIVITY THROUGH PROVISION OF S&T SOLUTIONS

1. Consultancy Services in:
  - (i) GMP/HACCP training and implementation within the food industry as contracted;
  - (ii) Cleaner production technology implemented at SRC and to at least one SME;
  - (iii) Wastewater Technologies;
  - (iv) Energy and Environmental studies; and



- (v) Product Development.
2. **Biotechnology Services**
    - (i) Continued supply of ginger plantlets as contracted for the resuscitation of the Ginger industry;
    - (ii) At least 10 new farmers utilizing Tissue Cultured plantlets resulting in a 10% growth in the production of *inter alia* banana, plantain and sweet potato; and
    - (iii) Filling market demand for ornamentals.
  3. **Food Processing Services**
    - (i) Technical Services in food processing to local and regional clients; and
    - (ii) Food pilot plant upgraded to improve efficiency and turn-around time in satisfying customers' request.
  4. **Analytical Services**
    - (i) Provision of chemical and microbiological analyses in water, wastewater and food to the agro-processing, municipal, tourism and manufacturing sectors;
    - (ii) Expansion of analytical laboratories to include accredited food tests; and
    - (iii) Provision of constant electricity supply to enable in-house analysis of some tests.
  5. **In-house and Contract R&D**
    - (i) Use of available local equipment for new product development through collaboration/ formalised agreements with R&D institutions;
    - (ii) Appropriate research for development of the local Nutraceutical Industry - diabetics;
    - (iii) Renewable Energy research and development to include assessment of the potential to generate renewable energy from waste produced by food processors; and
    - (iv) Plant breeding using mutation technologies - IAEA-funded project.
  6. **Information Products (Goods and Services)**
    - (i) At least 20 client requests for S&T information are satisfied by the packaging or repackaging of information;
    - (ii) S&T information requests of the Doc Centre is completed in a timely manner;
    - (iii) Data on regional PETSTATS for 18 regional participating countries analysed, verified and validated; and
    - (iv) CEIS Update CD-ROM 2008/2009 completed.

#### **INCREASED UTILIZATION OF TECHNOLOGY IN THE PRODUCTIVE SECTOR**

1. Marketing and Promotion of available SRC Technologies.
2. Transfer of technologies for commercialization with greater focus on transfers of technologies to MSME's.
  - (i) Anaerobic wastewater treatment systems commissioned including the following as appropriate: Bio-digester Septic Tanks, Bio-digesters, Upflow Anaerobic Sludge Blanket; pre-fabricated prototype/s;
  - (ii) At least 12 food formulations sold to MSMEs;
  - (iii) Accredited Training Programmes completed in areas such as food, tissue culture, nutraceuticals and wastewater management; and
  - (iv) Impact assessment studies completed.

**CONTINUAL SENSITISATION ON THE IMPORTANCE AND VALUE OF S&T TO THE NATION AND REGIONALLY**

1. Implementation of the project titled "Improving Innovation Capacity in the Caribbean", funded by the ACP-EU S&T programme; in partnership with National Institute of Higher Education, Research, Science and Technology (NIHERST) in Trinidad and Tobago, Mico University College, University of Technology and Church Teachers College here in Jamaica. MSTEM as well as the Ministries of Education from both Jamaica and Trinidad and Tobago will provide support. The project was approved in December 2013 for implementation over a 3-year period. It will focus on building capacities in the teaching and learning of science at its application in select primary and secondary schools.
2. Summer attachment programme for at least 12 science teachers.
3. Publications: Monthly on-line publication of S&T Bulletins; 2013 Volume of JJST.
4. Outpost programme including at least one income earning project.
5. Science and Technology Month celebrations.
6. Hosting of the Third Biennial Conference on Science and Technology tentatively scheduled for November 10 - 12, 2014. The proposed theme is "Green Gold: medical marijuana and other natural products - potential sources of wealth".

**8.0 BUDGETARY PROPOSAL FOR FINANCIAL YEAR 2014/2015**

The budgetary proposal for the Financial Year 2014/2015 is approximately \$540,480M and funds will be allocated as follows:

PURPOSE	BUDGETED \$'000
Administration	144,013.41
Information Services	69,125.84
Product Research & Development	130,065.33
Process Development	170,126.84
Promotion & Distribution of Products	27,144.72
<b>TOTAL</b>	<b>540,476.14</b>



Phillip Paulwell  
Minister

Science, Technology, Energy and Mining  
April 13, 2015

INFORMATION AND COMMUNICATIONS  
TECHNOLOGY

MINISTRY PAPER NO: \_\_\_\_\_

## PERFORMANCE OF eGov JAMAICA LIMITED FOR FINANCIAL YEAR 2014/2015 AND PRIORITY FOCUS FOR FINANCIAL YEAR 2015/2016

### 1.0 PURPOSE OF MINISTRY PAPER

This Ministry Paper is intended to inform Parliament and the public on the performance of eGov Jamaica Limited (eGovJa) during the 2014/2015 Financial Year and its focus for the 2015/2016 Financial Year.

### 2.0 BACKGROUND

On January 12, 2013, the Cabinet gave approval for the repositioning of Fiscal Services Limited (FSL) as the entity with responsibility for implementing Information and Communications Technology (ICT) projects across the Government of Jamaica. The repositioning includes the restructuring of the organisation, changing of portfolio ministry from the Ministry of Finance and Planning to the Ministry of Science, Technology, Energy and Mining (MSTEM) which has responsibility for ICT. In keeping with the expanding role of the organisation to provide ICT implementation services to the government, the name was changed from Fiscal Services Limited (FSL) to eGov Jamaica Limited (eGovJa).

#### 2.1 VISION

To be acknowledged as the reliable ICT solutions and services company dedicated to achieving excellence and transformational value to the GOJ.

#### 2.2 MISSION

We exist to revolutionize the Government of Jamaica's interactions with its entities, citizenry and businesses through harnessing the power of ICT.

#### 2.3 VALUES

The Core Values of e-GovJa that guide its mandate, policy and decision making include integrity, accountability, effective communication, innovation, knowledge and respect.

### 3.0 ROLES AND FUNCTIONS

The list below represents the roles and functions of eGovJa as articulated in our mandate and in support of the Government of Jamaica's National Development Plan.

- Oversee and effect the efficient implementation of all GOJ ICT enterprise initiatives, projects and programmes.
- Be the provider of "IT as a Shared Service" to the GOJ.
- Provide management oversight and master planning for GOJ ICT investments and assets (acquisition, selection, deployment and utilization).
- Provide Centres of Excellence and Innovation capabilities within defined areas.

#### **4.0 PRIORITY TARGETS/OBJECTIVES AND BUDGETARY ALLOCATION FOR FINANCIAL YEAR 2014/2015**

For Fiscal Year 2014/2015, eGovJa's Recurrent Approved Budget was J\$1.220B. The areas of primary focus were:

1. Providing ICT shared services across Government.
2. Enhancing ICT Security and Risk Management.
3. Facilitating systems integration for the ease of business.
4. Increasing operational efficiency at eGovJa.
5. Providing information technology platform to support the Tax Administration Jamaica and Jamaica Customs reform.
6. Facilitating the reduction of Government ICT operational cost.
7. Creating and maintaining a performance driven organization.
8. Completing a number of procurements under the Fiscal Administration Modernization Programme (FAMP). The FAMP programme was developed to assist the Government of Jamaica (GOJ) in strengthening the Ministry of Finance's (MOF) institutional capacity to effectively manage and account for its revenue inflows.
9. Providing technology services for the ICT Infrastructure and the development of an interface between the revenue collection systems for Jamaica Customs (Customs), Tax Administration of Jamaica (TAJ) and the Treasury Management Module (TMM). This is being done to facilitate the operations of the Central Treasury Management System (CTMS).
10. Implementation and maintenance of a Forensic Data Mining tool that assist the Government in analyzing tax data, Customs profiling and trend analysis. The tools also help to identify revenue leakages, revenue avoidance and fraud detection.

#### **5.0 PROGRAMMES AND TARGETS FOR FINANCIAL YEAR 2015/2016**

For Fiscal Year 2015/2016, e-GovJa has requested a budgetary allocation of J\$1.893B. The areas of primary focus will be to:

1. Attract and retain the required administrative and technical skills needed to support our clients and systems.
2. Maintain physical and technological infrastructure needed to facilitate the delivery of appropriate levels of client and systems support.
3. Continue to develop and support services that provide communication access to all Customs locations across the island, in order to perform effectively in collecting revenue and enforcing the Customs laws.
4. Continue the development of new systems, enhancement and integration of existing systems to facilitate the expansion of integrated computerized services for Tax Administration of Jamaica (TAJ).
5. Continue operational support for all MOFPS Special Project systems (FMIS, APS, BRS, SMS, JaBIS and Bizpaygov (payroll))

6. Play a leading role in the Procurement and implementation of the following enterprise solutions:
  - HR and Payroll
  - e-Government Procurement
  - Integrated Financial Management System (IFMIS)
  - Enterprise Content Management
7. Support implementation of ASYCUDA for Jamaica Customs Agency
8. Provide software development and implementation support for the Business Registration Super-form.
9. Build Institutional Capacity to better serve our widened mandate.
10. Use ICT to underpin transformation within GOJ, through the:
  - Development of an ICT Enterprise Architecture Framework
  - Play a leading role in the development and implementation of all IT Shared Services for GOJ.
  - Development of GOJ Bring Your Own Device (BYOD)/Mobile Device Management (MDM) framework and policy.
  - Provision of IT support for Land Transportation Modernization.
  - Provision of system enhancements for Property registration.
  - Provision of IT support for Public Sector Customer Service strengthening.
  - Provision of IT support for Trade Facilitation Single Window to make doing business with GOJ easier for citizens and businesses.
11. Facilitate the improvement of "e-Government" and "Ease of doing business" ICT rankings, through:
  - Implementation of a Transactional Portal.
  - Conducting Business Process Re-engineering (BPR) for at least 3 targeted initiatives.
12. Optimize the value of ICT investments, through:
  - The migration of identified databases to a FOSS database platform.
  - The development of an ICT Shared Services Model.
  - The management of ICT-related risks, through the implementation of an Information Security Management System (ISMS).
  - Assist MSTEM with the establishment of a Cyber Incident Response Team (CIRT).
13. Facilitate the national growth development Strategy, through:
  - Formulation of policy for GOJ Open Data.
  - Conducting assessment and making recommendations for the development of a GOJ National Identification System (NIDS) ICT infrastructure, application and data services.
  - Providing support for the ICT component of the Logistics Hub.
  - Providing IT advice for the Port Community System.
14. Facilitate ICT investment through PPP opportunities.

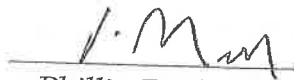
## 6.0 MEDIUM TO LONG TERM FOCUS

1. Development of systems and services for efficient delivery of GOJ services to citizens and businesses.
2. Development of centralized methods of creating, managing and supporting technologies.
3. Optimization of ICT investments.
4. Development of a framework for coordinated responses to IT support.
5. Development of standardized approaches to IT implementation within GOJ.
6. Development of data and niche solutions for offer to clients outside of the GOJ for profit.

## 7.0 BUDGETARY PROPOSAL FOR FINANCIAL YEAR 2015/2016

The budgetary proposal for e-GovJa Recurrent Budget (0163) for the Financial Year 2015/2016 is allocated as follows:

CODE	OBJECT CLASSIFICATION	BUDGETED \$'000
21	Employee Compensation	715,665
22	Travel, Accommodation and Subsistence	99,667
23	Rental of Property & Machinery	126,282
24	Utilities	117,785
25	Purchase of Goods and Services	710,820
29	Financial Assistance	5,500
31	Equipment/Capital Goods	117,447
<b>TOTAL RECURRENT BUDGET</b>		<b>1,893,165</b>



Phillip Paulwell

Minister

Science, Technology, Energy and Mining

April 13, 2015

MINISTRY PAPER NO: \_\_\_\_\_

**PERFORMANCE OF THE e-LEARNING JAMAICA COMPANY LIMITED  
FOR FINANCIAL YEAR 2014/2015 AND PRIORITY FOCUS FOR FINANCIAL  
YEAR 2015/2016**

**1.0 PURPOSE OF MINISTRY PAPER**

This Ministry Paper is intended to inform Parliament and the public on the performance of the e-Learning Jamaica Company Limited during the 2014/2015 Financial Year and its focus for the 2015/2016 Financial Year.

**2.0 MISSION**

The mission of the Company is to dedicate its human and other resources in optimum fashion to:

- Contribute to the development of a knowledge-based society aligned to Vision 2030;
- Establish sustainable partnerships with the sectors identified;
- Create an environment that is universally available, applicable and highly utilised by Jamaica's citizenry;
- Use e-learning methodologies to support a culture of continuous learning; and
- Support the growth of indigenous learning technologies/ media production industry.

**3.0 BACKGROUND**

The e-Learning Jamaica Company Limited (eLJam) was established in March 2005 as a limited liability company under the Ministry with portfolio responsibility for Telecommunications, with the core functions to (as updated in March 2013):

- implement e-Learning projects in collaboration with the Ministry of Education (MOE);
- promote the integration and infusion of technology in the education system; and
- act as the implementation arm for approved interventions funded through the Universal Access Fund established under the Telecommunications Act 2001.

An amount of US\$50 million was approved by Cabinet in June 2005 to be accessed from the Universal Service Fund (USF) (previously Universal Access Fund), to implement the initial project targeted at the high schools. This project was developed as a joint initiative with the Ministry of Education (MOE) after much consultation with principals and teachers and other stakeholders with its components targeted at providing digitalised instructional materials for teachers and students, computers and multimedia equipment, and training of teachers in the use of the technology in instructional delivery.

The Company was transferred to the MOE in June 2011, but was relocated to the telecommunications Ministry, MSTEM, in January 2012, and its mandate has been



broadened to include the implementation of e-Learning projects with other relevant Ministries and Agencies.

In addition, in order to increase access to e-learning, an e-Learning Tablets in Schools pilot project commenced in September 2014, providing broad band and WiFi connectivity and approx. 25,000 tablet devices preloaded with apps and e-books, to students and teachers in 38 pre-primary, primary, secondary and tertiary schools across the island, and will train teachers in the schools in tablet integration and facilitators in learning centres in their immediate neighbourhoods to support the access to relevant e-content by learners of all ages, ensuring the inclusion of the underprivileged. The project will run for a full academic year to June 2015.

#### **4.0 ROLE AND FUNCTIONS OF E-LJAM**

The Company develops and implements all the components of the e-Learning projects, procuring the required goods and services and ensuring that the schools fully adopt and utilise the resources provided (except for the broad-band wide area network linking the project institutions, selected parish libraries and post offices and the WiFi Connectivity to the TIS pilot schools, which is provided by the USF).

#### **5.0 THE E-LEARNING HIGH SCHOOL PROJECT**

##### **5.1 Scope of the High School Project**

The project includes a wide cross section of educational institutions that are involved in teaching/learning at the high school level

- **203 educational institutions**
  - 166 public high schools
  - 6 public special schools
  - 10 teachers colleges (2 AV equipment only)
  - 5 community colleges (AV equipment only)
  - 16 independent high schools
- **Grades 7-11 (pilot grades 10&11)**
- **11 subjects (pilot 5)**
- **Over 11,500 teachers (pilot 2880)**
- **Over 260,000 students per year (pilot 37, 344)**

The technology deployment strategy is intended to directly impact:

- Teacher Planning and Organization Capability/Research Capability
- Subject Matter Delivery to include student interaction, group work, individual work, whole-class delivery
- Student Assessment / Immediate feedback
- Student Self-help
- School Administration

- Individual interactive learning - Remedial

This strategy is comprised the following:

- Remedial/enrichment labs (desktops)
- Presentation kits for teachers in Grade 10&11 classrooms (laptop, multimedia projector and screen)
- Group type lab (mobile laptop kits)
- Computers for library, resource room (desktops/laptops)
- Computers for staff room (desk tops/laptops)
- Network connectivity and presentation bundles for grades 10 & 11
- Audio-visual equipment (multimedia projectors, document cameras, digital cameras, interactive white boards, televisions)

The average allocation of equipment per school is as follows, with the independent schools being allocated equipment commensurate with their smaller size:

◦ Servers	1
◦ Desktops	56
◦ Laptops	20
◦ Printers	3
◦ Multimedia Projectors & Screens	16
◦ Document Cameras	4
◦ Scanners	2
◦ Digital Cameras	2
◦ Televisions	2
◦ DVD/CD Players	3
◦ VCR Players	2
◦ Netbooks in mobile kits	10
◦ Interactive White Boards	1 fixed, 1 mobile

THE PROJECT COMPONENTS ARE AS FOLLOWS:

#### COMPONENT 1 - INSTRUCTIONAL MATERIALS

Acquisition / Development of a comprehensive set of standard ICT-based instructional materials for teachers and students in 11 subject areas:

- Teachers Instructional Materials (TIMs)
- Student's Instructional Materials (SIMs)
- Interactive Educational Software (for 'challenging' topics)
- Item Bank (multiple choice and extended questions and answers)
- Video-taped Lecture Series

#### COMPONENT 2 - TECHNOLOGY INFRASTRUCTURE FOR STORAGE / DISSEMINATION / ACCESS

- Provision of ICT equipment and related software to schools

- ii. Establishment of a **Central Repository for Educational Materials (CREM)** to store, reproduce, continuously update, and distribute materials, and to include a web-based repository accessible over the broad-band network
- iii. Upgrade of the Education Management Information System (EMIS) at the MOE to enhance management and administrative capability
- iv. Broad Band Internet Access (to be provided by USF)

**COMPONENT 3 - TEACHER TRAINING**

- i. Principals' Awareness and Orientation
- ii. Training of Teachers and Subject Tutors in Teachers Colleges in 3 phases
  - a. Modern methodologies for delivery, change management
  - b. Training and Certification in basic ICT skills (to international standards)
  - c. Integration of ICT into the teaching/learning process (certification to ISTE standards)
- iii. Training of select group of lecturers to masters level to ensure sustainability
- iv. Training of librarians to be able to support the users of the e-content provided by the project

**COMPONENT 4 - REMEDIAL SUPPORT**

Collaborating with existing remedial interventions providing ICT-based materials and equipment and training of tutors and support personnel.

**COMPONENT 5 - CONTINUOUS ASSESSMENT**

Introduction of standard examinations across the system at grades 7, 8, 9 (Grade 11 CSEC and Grade 10 CCSC, already in place).

**6.2 Performance/Achievements for Financial Year 2014-15 for the High School Project**

An amount of \$485 million was allocated for completion of the High School Project and hand over to the MOE by March 2014, with an amount of J\$84,000 million allocated for recurrent expenditure. The following Chart gives the major strategies planned and the achievements for this period:

PLANNED ACTIVITY 2014-15	ACHIEVEMENTS 2014-15
Installation of Integrated Learning Content Management System and School Management System (LCMS/SMS) application	-Not feasible in the short term. Focus is on greater utilisation of the existing LCMS
Training of remaining 6000 teachers in technology integration utilising resources available through the Microsoft PIL agreement	-1500 currently in training to be completed by beginning of April 2015.
Training additional 30 System Administrators to mitigate attrition	-90 new System Administrators currently in training to be completed beginning of April 2015

PLANNED ACTIVITY 2014-15	ACHIEVEMENTS 2014-15
Impact Assessment of the project	Impact assessment including project evaluation complete. Report being finalised
Replacement of memory and upgrade of computers and servers in all 196 schools	-All schools Upgraded, upgrading Virus Protection Licenses.
Completion of TIMs and SIMs for Information Technology	-Information Technology TIMs and SIMs Completed
Customisation of Moodle Learning Content Management System	-Moodle Upgraded and customised -Additional Customisation to be added through MOE
Animation of previously developed content	-Interaction added to previously developed content
Support to JFLL High School Diploma Programme	-Consultancy and Apps provided to JFLL High School Diploma Programme
Set-up activities for the establishment of a Media Production arm, if found to be feasible, to market the content developed by MOE and e-LJam and manage the Central Repository	-It was not found to be feasible outside of MOE; MOE will therefore continue to carry out this function.
Completion of remaining 20% of fixed whiteboard installations	-All project secondary schools received Interactive Whiteboards and Training
Relocation of CREM equipment	
Full establishment of CREM repository hosting services	-Funds to be provided for MOE to improve their Data Centre facilities to continue to host the Education Repository
Helpdesk services fully established	-Helpdesk services available to High schools and future project schools
Administration of Grade 7 & 9 Tests in June 2014 and preparation for 2015	- 2014 Diagnostic test conducted in grade 7 & 9
Acquisition of special technology for students in Special Schools with learning and physical disabilities	-75% of Technology acquired and provided to 6 schools. The remaining equipment being shipped for delivery in March 2015
Process documentation and handover to MOE	-Inventory updated, networks upgraded, Virus Protection licenses to be renewed and equipment to be transferred via Deed of Gift March 2015.

## 7.0 THE E-LEARNING TABLETS IN SCHOOL PILOT (TIS) PROJECT

### 7.1 Scope of TIS Pilot Project

The project is being implemented in

- o 38 educational institutions -
  - 6 pre-primary schools,
  - 13 primary schools
  - 5 all age and junior schools,

- 12 high schools
- 1 special school and
- 1 teachers college
- **29 community learning centres**
  - 15 Community Access Points
  - 14 JFLL Centres
    - covering
    - approx. 24,000 students
    - 1,200 teachers
    - 142 Facilitators

**The Technology Deployment Strategy** will provide:

- i. Internet access provided by USF and telecom companies.
- ii. One tablet device per registered student in the selected schools, appropriately sized and configured to allow access to online e-learning content and pre-loaded with content and applications related to the learning objectives of the grade level of the student, and to enable tracking of the device if stolen or misplaced.
- iii. One tablet/computer device per teacher appropriately sized and configured to facilitate the integration of technology into instructional delivery.
- iv. A range of e-learning computer and multimedia devices provided to pre-primary and primary schools, for children and youth to include mobile laptop kits, desktops, bank of tablets, interactive white-boards/projectors, scanners, printers and other technological devices to support teaching and learning

**The Project Components** are as follows:

- Project Set-Up
- Provision of Tablets and Broadband connectivity
- Technology Infrastructure to pre-primary and primary schools
- Content Management and Delivery
- Teacher and Facilitator Training
- Implementation Support
- Project Monitoring and Evaluation
- Outreach and Public Education

### **Special considerations**

A special working group has been established to develop strategies to mitigate against the theft of the tablets and the vulnerability of children carrying tablets to personal injury. The tablets themselves will have built-in tracking and bricking capability and the Public Education programme will advise that the tablets will be useless if stolen. Parents and students are also going to be required to sign agreements to use and care devices.

### 7.3 Performance/Achievements for Financial Year 2014-15 for the TIS Project

An amount of \$1.4 billion allocated from the Universal Service Fund (USF) was approved by Cabinet in December 2013. The Project is being designed by a joint team from MSTEM, MOE, USF and e-LJam, the major stakeholders of the project.

The following Chart gives the major strategies planned for the TIS pilot and the achievements for this period:

	PLANNED ACTIVITY FOR 2014-15	ACHIEVEMENTS FOR 2014-15
1	Content acquisition - apps and e-books and preloading on tablets	i. The MOE evaluated and selected appropriate e-content which is in keeping with the curriculum. The e-content which includes applications, e-books and web-resources are now being made available to teachers and students who are registered by the schools to receive tablets
2	Provision of tablets and supporting technology, charging carts for tablets	<ul style="list-style-type: none"> <li>o As at February 6, 2015; 22,634 tablet devices were distributed to students (21,286) and teachers (1,164) including the Teachers' College (for students and instructors)</li> <li>o Pilot schools are in the process of receiving storage cabinets, charging carts and interactive whiteboards. Additional supporting technologies such as, smart TV's, printers and scanners, are being sourced for the pre-primary and primary schools</li> </ul>
3	Internet Connectivity provided to pilot schools and hotspots in surrounding areas	<ul style="list-style-type: none"> <li>o USF is in the process of providing the pilot schools with high speed broadband internet and ubiquitous WiFi connectivity</li> </ul>
4	Training of teachers in basic ICT skills and tablet integration	<ul style="list-style-type: none"> <li>o Teachers have been trained in Basic ICT skills and in integrating the tablets and other technologies into the teaching/learning process</li> <li>o Instructors and facilitators at the various learning centres/community access points (CAPs) in the surrounding neighbourhood of the pilot project schools have received training to assist learners who utilise their facilities. Coaches have also been assigned to regions to assist teachers on-site</li> <li>o School Principals, Board Chairmen and teachers have been trained and sensitised by National Council for Educational Leadership (NCEL) on the need for a culture change to support the TIS project</li> </ul>
5	Public Education	<ul style="list-style-type: none"> <li>o Comprehensive programme including               <ul style="list-style-type: none"> <li>o Weekly Radio Programme</li> <li>o Competition for animated Mascot</li> <li>o Town Hall meetings</li> </ul> </li> </ul>
6	Implementation Support	<ul style="list-style-type: none"> <li>o Tablet in Schools Policy Manual developed, schools and parents sensitised in use and care of</li> </ul>

	PLANNED ACTIVITY FOR 2014-15	ACHIEVEMENTS FOR 2014-15
		tablets <ul style="list-style-type: none"> <li>◦ Parents and guardians were required to sign an agreement with respect to the proper use, care and safety of the tablet devices, before the tablets were delivered to the students</li> <li>◦ Technology management teams have been established in schools to manage the project implementation and Community Advisory groups have been formed to foster buy-in and ownership by the community</li> </ul>
7	Project Evaluation	<ul style="list-style-type: none"> <li>◦ Baseline surveys completed</li> </ul>

### 8.0 MEDIUM TO LONG TERM FOCUS

It is planned to roll-out the Tablets in Schools Project over the next 4-5 years (over 800 schools). In addition, other projects are being explored dealing with special interest groups including disadvantaged youths, and continuation of providing Technology Infrastructure Management and Support services to the MOE.

### 9.0 PROGRAMMES AND TARGETS FOR FINANCIAL YEAR 2015/2016

The financial year 2015-16 will see the formal handover of the high school project to the MOE, including evaluation of the project at a policy level and recommendation for policy revision where relevant. It is also expected we will be providing some level of support with respect to the provision of the Technology Infrastructure Management and Support services requested by the MOE.

The other major focus of this period will be the implementation of the extension of TIS Pilot in September 2015 and ongoing evaluations to inform the planning of the roll-out of the project beginning September 2016.

The following are the strategic objectives to be achieved:

#### Provision of Technology Management Services to the MOE

- i. Replace /repair defective audio-visual, computer, network and power equipment
- ii. Renew Application software licences
- iii. Support for the Central Repository for Education materials
- iv. Administration of Grade 7 & 9 Tests in June 2015.

#### TIS Pilot

- i. Conducting baseline survey of schools to determine teacher capacity, building layout, WiFi requirements, general e-readiness of schools;
- ii. Developing the cost-sharing mechanism in consultation with the Ministry of Social Security, the PIOJ, the National Parent Teachers Association and the Nationals Parents Commission;

- iii. Developing the BYOD strategy, including research among schools already involved in such a programme;
- iv. Sensitizing schools, parents and wider school community, among other things, through media programmes and town hall meetings;
- v. Purchased Tablets, preloaded with content and delivered to schools and parents;
- vi. Management Services provided by suppliers;
- vii. Sensitizing dealers of the need to provide suitable tablets and other devices at competitive rates to support the BYOD arrangement;
- viii. Identifying and acquiring additional e-books, web-resources and applications for each grade level of the primary and secondary schools;
- ix. Monitor the implementation of broad band and WiFi connectivity to be provided to all schools;
- x. Training of principals, teachers, instructors and facilitators in libraries, CAPs and other centres in various areas including;
  - change management
  - the use and care of the tablets
  - basic ICT skills and integrating the technology in instructional delivery;
- xi. Providing insurance coverage to cover damage, theft or loss of equipment and devices;
- xii. Providing technical and other support to principals, school boards, parents, teachers, students, community leaders, to ensure successful implementation and sustainability of the project;
- xiii. Populating the central repository with relevant e-learning content, including content relevant to the economic focus of the community – farming, tourism, business processing, telemarketing, fishing, etc.;
- xiv. Monitoring and evaluation; and
- xv. Continuation of planning for national roll-out of project.

#### **10.0 Budgetary Proposal for Financial Year 2015/2016**

The budgetary proposal for the Financial Year 2015/2016 is approximately J\$950 million for the Capital A expenditure, of which \$700 million will be provided by the USF for the TIS pilot. J\$84 million is proposed for recurrent expenditure.



Phillip Paulwell  
Minister

Science, Technology, Energy & Mining  
April 13, 2014



MINISTRY PAPER NO: \_\_\_\_\_

**PERFORMANCE OF POST AND TELECOMMUNICATIONS DEPARTMENT AND  
THE POSTAL CORPORATION OF JAMAICA (POSTCORP) FOR FINANCIAL  
YEAR 2014/2015 AND PRIORITY FOCUS FOR FINANCIAL YEAR 2015/2016**

**1.0 PURPOSE OF MINISTRY PAPER**

This Ministry Paper is intended to inform Parliament and the public on the performance of the Post and Telecommunications Department during the 2014/2015 Financial Year and its focus for the 2015/2016 Financial Year.

**2.0 BACKGROUND**

The Post and Telecommunications Department, (PTD), headquartered at the Central Sorting Office on South Camp Road in Kingston, constitutes a network of Post Offices and Postal Agencies across the country.

A second entity, The Postal Corporation of Jamaica (Post Corp), exists as a limited liability company and operates parallel to the Post and Telecommunications Department (PTD). The mandate of the Postal Corporation of Jamaica is to commercialize and modernize the Post and Telecommunications Department.

This commercialization and modernization is expected to be achieved through the renewal of the postal services and introduction of new market driven products and services which would make the Post Office competitive but also take it to financial self-sufficiency and off the national budget. It is envisaged that Post Corp. will take over the operations of PTD once the requisite legislation is enacted.

The PTD has a staff complement of approximately one thousand nine hundred and fifteen (1,915) employees. Two thousand three hundred and forty-four (2,344) positions are reflected on the Establishment while the Postal Corporation of Jamaica has thirteen (13) contracted and relief employees. The PTD operates two hundred and eighty-three (283) post offices and two hundred and sixty-seven (267) postal agencies across the island. In addition to its core postal products and services, the post office in partnership with public and private sector entities offers bill payment services, Smarter Card top ups, phone cards sales, Internet Café services, advertising mail and PATH welfare and NIS payments.

**3.0 THE GLOBAL AND LOCAL ENVIRONMENT**

The PTD operates in a competitive and global Postal Sector governed by the Universal Postal Union (UPU), situated in Berne, Switzerland. As the postal sector continues to evolve, the international operational standards within the sector continue to be strengthened and accepted by postal administrations globally. It therefore means Jamaica's Postal Administration has to operate at the international standards if it is to compete and perform efficiently and effectively in the environment. Re-engineering our processes to meet and surpass international quality service standards is far advanced.

These standards are critical, as Jamaica Post is paid based on its performance, that is, our revenue is tied to how quickly international items are delivered to the addressee, as well as, the ability to track and trace the mails.

Postal administrations across the globe have been forming partnerships with private sector entities, integrating technology in the postal operations, getting involved in financial services and pushing e-commerce and parcel services. These are all encouraged by the UPU as some of the avenues the postal sector must embrace if the post is to survive.

Locally, there is an urgent need to improve the poor infrastructure and facilities in a number of Post Offices as they do not add value to the customer friendly and corporate image being developed for the Postal Service. Jamaica Post continues to face strong competition from courier companies, some of whom are expanding their reach and services. Further modernization of the PTD, along with the ability to operate as a Corporation in a well regulated environment supported by sector policy and postal laws that are not only enforceable, but enforced, is critical to the growth and survival of Jamaica Post.

#### 4.0 ROLE AND FUNCTION

The Post and Telecommunications Department (PTD) has responsibility for all mail in Jamaica as the official designated operator and has as its mandate to ensure access for all Jamaicans to affordable postal services. At the operational level, PTD delivers mail locally in line with international standards established by the Universal Postal Union. For premium products such as Express Mail, the standards are established through bilateral agreements with our major mail exchange partners.

#### 5.0 CHALLENGES

Critical to the Department's ability to move forward as a competitive and profitable entity is the enactment of the Postal Bill. Having the Bill enacted would go a far way in the Postal Corporation of Jamaica's efforts to fully commercialize and modernize the Department.

Another major challenge continues to be balancing the Universal Service Obligations (USO) and establishing recovery. In the new modus operandi and in keeping with the global trends it is necessary to recover cost and generate new revenue streams.

#### 6.0 PRIORITY TARGETS/OBJECTIVES AND BUDGETARY ALLOCATION FOR FINANCIAL YEAR 2015/2016

	STRATEGIC PRIORITIES	ACTION PLANS AND COST
1.	Legislation	Finalization of the Postal Services Bill; the establishment of a modern legal framework for the operations of the industry.

	STRATEGIC PRIORITIES	ACTION PLANS AND COST
		Cost for consultant: \$3 million
2.	Revamping of the Business Model → Efficiency → Cost Reduction	<ul style="list-style-type: none"> <li>◦ Move from a Central Government Department to a fully corporatized entity. Concurrent with this move will be the modernization/rationalization of the Department.</li> <li>◦ Procurement of Mobile Post Office to deliver postal and other services through a more cost effective, customer friendly and efficient modality.</li> </ul> <p>Estimated Cost: to be determined</p>
3.	Consolidation of quality Service Standards → Competitiveness → Increase Revenue	<p>The Department will continue its thrust to attain world class standards in all areas of its business. To include inbound mail scanning using an imaging machine, full track and trace upgrade, quality measurement systems and equipment.</p> <p>Estimated Cost: to be determined</p>
4.	ICT Thrust → Provide ICT access to citizens across the island	<p><b>Community Access Points</b> This initiative is being pursued in partnership with the Universal Access Fund.</p> <p>Estimated Cost:</p>
5.	→ Leverage Information Technology to expand revenue generating services, increase customer satisfaction and assist in making more government services available at the community level.	<p><b>Counter Automation Project.</b></p> <ul style="list-style-type: none"> <li>◦ Upgrade information systems in major Post Offices with central monitoring and control at the Head Office.</li> <li>◦ Provide the technology infrastructure to connect with third party commercial and government systems.</li> <li>◦ Provide revenue generating electronic transactions on behalf of third parties.</li> <li>◦ Leverage the Post Office network to bring e-government services to more communities</li> </ul> <p>Estimated Cost: US\$1million</p>
6.	Establish Full Track and Trace System	<p>Increase competitiveness by expanding and upgrading the current limited facility to track certain mail items. The upgrade will allow for tracking locally and for more international destinations and will increase the number of Post Offices that will be able to carry out this function. The project is funded by the Universal Postal Union under its Quality of Service Fund (QSF)</p>

	STRATEGIC PRIORITIES	ACTION PLANS AND COST
7.	Improve the Management of Philately Products	Design and develop accounting system for managing philately transactions.  Estimated Cost: to be designed in-house
8.	Upgrade Human Resource Management System	Digitization of personnel records <ul style="list-style-type: none"> <li>◦ Procure the services of information technology practitioners to convert archived paper records for staff to digital form.</li> <li>◦ Integrate records into the new Government Human Resource Management System to be brought on stream late in the Fiscal year 2015/2016</li> </ul> Estimated Cost: J\$6 million
9.	Rebuild image and increase visibility of the PTD, its products and services	Media Campaign <ul style="list-style-type: none"> <li>◦ Implementation of media/marketing campaign to include the electronic, print and social media as well as direct marketing.</li> </ul> Estimated Cost: J\$12million (Funding made available through the Postal Corporation of Jamaica) Improved Customer Service Delivery <ul style="list-style-type: none"> <li>▪ Exposure to and training in General and Public Sector Customer Service standards.</li> <li>▪ Administration of customer service surveys.</li> </ul> Philately <ul style="list-style-type: none"> <li>◦ Implement Philately in schools to promote stamp collection and by extension the Post in general.</li> </ul> Estimated cost: to be determined
10.	Improve Security	SECURITY SERVICES <ol style="list-style-type: none"> <li>1. Review of contract security services.</li> <li>2. CCTV <ul style="list-style-type: none"> <li>◦ Upgrade and increase CCTV coverage at CSO;</li> <li>◦ Increase storage capacity of CCTV recordings; and</li> <li>◦ Expand CCTV coverage to select major offices.</li> </ul> </li> <li>3. Install Burglar Alarm Systems at five additional postal locations.</li> </ol> Estimated Cost: \$15 million

	STRATEGIC PRIORITIES	ACTION PLANS AND COST
		<p>4. Facilitate Jamaica Customs with their Border Control mandate by making provision for housing a new x-ray machine for incoming mail.</p> <p><b>Training</b> Intensify training of postal staff in the area of postal security. This includes managing the working environment, fraud detection, handling outbound mail in relation to heightened security protocols governing air transportation.</p> <p><b>Standards</b> Steps are to be taken to become compliant with UPU Security Standards.</p>
11.	<p><b>Restructuring Divisions/Units</b> of</p>	<p>Significant modification is to be made in five (5) Divisions/Units and will facilitate the following:</p> <ul style="list-style-type: none"> <li>◦ <b>Security:</b> wider coverage and improved management of general and postal security.</li> <li>◦ <b>Procurement:</b> efficient and improved management of inventory, storage and procurement procedures.</li> <li>◦ <b>Maintenance:</b> improved management and maintenance of government assets.</li> <li>◦ <b>Operations:</b> improved efficiency in postal operations and systems.</li> <li>◦ <b>HRM:</b> retention of competent staff to fit into the new mandate of the Department and its pending modernization.</li> </ul> <p>The restructuring and modification exercise includes the reclassification, upgrading and re-titling of positions and realignment of Divisions/Units to fit into the Department's new mandate and pending modernization.</p>
12.	<p><b>Succession Plan</b></p>	<p>The Department will be setting up a process for identifying and developing staff that show potential to fill key business leadership positions in the Department, thereby increasing the pool of experienced and capable employees who are prepared and available to assume leadership roles as they become available.</p>
13.	<p><b>Performance Management Appraisal System (PMAS)</b></p>	<p>The Department will step up its sensitization and training programme for staff in an effort to get them familiar with PMAS.</p>

	STRATEGIC PRIORITIES	ACTION PLANS AND COST
		PMAS is a system that ensures individuals within the organization know and understand the overall purpose of the entity, its strategic direction and goals, how they contribute to and how they will be held accountable individually and collectively for the achievement of the stated goals and objectives.
14.	Development of Postal Sector Policy	A Postal Sector Policy is to be developed in conjunction with the Ministry of Science, Technology, Energy and Mining. This policy is expected to facilitate and support a well regulated environment for the sector.

#### 7.0 PERFORMANCE/ACHIEVEMENT - FINANCIAL YEAR 2014/2015

THE PERFORMANCE AND ACHIEVEMENTS FOR THE FINANCIAL YEAR 2014/2015 ARE AS FOLLOWS:

- Lodgements into the Consolidated Fund as at February 2015: - \$1,067,150,000.00
- Appropriations-In-Aid as at February 2015 :- \$319,385,778.00
- A new website was designed and developed. The content is being re-edited in preparation for re-launch expected by the end of financial year 2014/2015.
- Developed and installed inventory tracking system for all items used at the CSO and throughout the Postal Network.
- Designed and developed local tracking system for US priority mail entering the Jamaican Mail system as ordinary mail.
- Acquisition of postal equipment and two vans to facilitate the introduction of door to door delivery.
- The Falmouth Post Office was renovated and re-opened on June 30, 2014. This renovation was funded by the Tourism Enhancement Fund (TEF).
- A Postal Point was opened in the New Kingston Business Centre in October, 2014. The location serves as a **drop off point** for businesses and the general public in the New Kingston Commercial District. Its proximity to business customers makes it easier for them to access the services offered. Mail cannot be collected or delivered from this location.

- Fast Track, a new international expedited service offered in conjunction with DHL was launched in October 2014
- The Internet Café at the Liguanea Post Office was fully refurbished with the help of the LIME Foundation and reopened to the public on October 9, 2014.
- The Department began operating its own canteen under the provisions of a specific model and with the financial support of the Postal Corporation of Jamaica Limited.
- Feed My Sheep, an Early Childhood Institution on Glenmuir Road, Kingston was adopted by the Post and Telecommunications Department. In November 2014, a book case was donated to the school.
- The Department continues to make its contribution to the review of the National HIV Workplace Policy and is represented in the consultative workshops.
- The staging of the Department's annual community health fair was a success. PTD brought together businesses, schools and communities in and around Norman Road to provide students and residents with a range of medical tests and checks for free and in some cases at significantly reduced cost.
- External programmes including Business Administration, Logistics, and Food Preparation were made available to staff and a total of 116 persons benefited from the programmes.
- Internal programmes including Grammar, Summary and Report Writing as well as Writing Operational Plans were attended by over 200 members of staff.
- Six short presentations on topics such as Bankruptcy, Preparing a Will, Scholarships and Loans and Cancer were made to staff by entities from the public and private sector.

## 8.0 MEDIUM TO LONG TERM FOCUS

The PTD is embarking on an initiative which will see the Department introducing new products and modes of modality for the delivery of mail products. These include:

- The establishment of Post Shops:- Currently looking at prospective locations; and
- The re-launch and promotion of one premium product with vast potential for garnering additional revenue:- preparations to complete this

task are on-going.

## 9.0 PROGRAMMES AND TARGETS FOR FINANCIAL YEAR 2015/2016

### 9.1 FINANCE

Training of 30 staff members in the Finance Unit in Government Accounting 1, 2, and 3.

This represents approximately fifty percent (50%) of the staff complement within the Finance Unit.

### 9.2 HRM

The Department, with the assistance of private sector entities, volunteers and communities, will continue its Labour Day programme to paint and clean-up selected Post Offices across the island.

### 9.3 HRD

- The Department will be facilitating the administration of the Business Administration Levels 2 & 3 programmes to staff who meet the requirement for participation.
- Customer Service Training leading to certification is to be done in conjunction with the HEART Trust. The training will be open to front line staff throughout the postal network.
- A course in Interviewing Techniques is slated for the first quarter of Financial Year 2015/2016

### 9.4 OTHER INITIATIVES

#### Key Initiatives

- To become a major player in the e-commerce market for online shoppers to ship through the post.
- Streamlining of sector including the regulatory framework which will enhance efficiencies in the sector and protect consumers.
- Increase Revenue.
- Provide greater range of logistics solutions for local consumers.
- Foster increased competition among sectoral players.
- Reposition the Post Office to achieve greater efficiencies and build new revenue streams which will greatly reduce the need for budgetary support.
- Working closely with other organizations and the Government to deliver better and provide new products and services to Jamaicans to improve their overall quality of life.



### 10.0 BUDGETARY PROPOSAL FOR FINANCIAL YEAR 2015/2016

The budgetary proposal for the Financial Year 2015/2016 is an approximate amount and funds will be allocated as follows:

PURPOSE	BUDGETED \$'000
21 - Compensation	1,240,840
22 - Travel Expenses and Subsistence	79,829
23 - Rental of property machinery & Equipment	14,219
24 - Utilities & Communications Services	126,987
25 - Use of Goods and Service	690,525
29 - Awards & Social Assistance	5,150
30 - Contributions & Grants	3,084
31 - Capital Goods	8,919
<b>TOTAL</b>	<b>2,169,553</b>

Less Appropriations-In-Aid of \$688,463.00

Net Total Budget: \$1,481,090.00



Phillip Paulwell  
Minister

Science, Technology, Energy and Mining  
April 13, 2015

MINISTRY PAPER NO: \_\_\_\_\_

**PERFORMANCE OF THE SPECTRUM MANAGEMENT AUTHORITY (SMA) FOR  
FINANCIAL YEAR 2014/2015 AND PRIORITY FOCUS FOR FINANCIAL YEAR  
2015/2016**

**1.0 PURPOSE OF MINISTRY PAPER**

This Ministry Paper is intended to inform Parliament and the public on the performance of the Spectrum Management Authority during the 2014/2015 Financial Year and its focus for the 2015/2016 Financial Year.

**2.0 MISSION**

"To ensure the efficient management of Jamaica's radio frequency spectrum in keeping with international best practice and in the interest of social, economic and technological development".

**3.0 BACKGROUND**

**3.1 MANAGING THE SPECTRUM**

The SMA commenced its operations in April 2001 and was established pursuant to the **Telecommunications Act 2000** by the Minister with responsibility for telecommunications as the regulatory body responsible for managing the radio frequency spectrum. This was against the background of Jamaica's international commitments to the World Trade Organization's (WTO) telecommunication agreement, and the policy objectives enunciated by the Government of Jamaica ("GOJ") with respect to the telecommunications sector.

**3.2 VISION**

"To create the environment for the radio frequency spectrum to become the preferred medium of communication."

**4.0 THE GLOBAL AND LOCAL ENVIRONMENT**

Wireless communications systems across the globe have been expanding at a phenomenal rate (especially over the last five years) and their importance as a tool for development and information access is undeniable. Many countries, both developed and developing, have been reporting continued growth in the demand for spectrum, from both existing and new users as the spectrum has become the preferred medium of communication. This has prompted spectrum managers to redouble their efforts to identify solutions which ensure unrestricted long term growth of those services, through the allocation of new bands and being innovative, utilizing technology to ensure more efficient utilization of the spectrum. Unfortunately, the inescapable reality is that unless more commercially viable spectrum is allocated to mobile, the industry will find it increasingly difficult to provide the quality of service and data rates that consumers expect at affordable prices. As a result, ITU's World Radio communications

Conference 2015 (WRC-2015) will be focused on identifying additional spectrum for mobile services.

Cellular companies continue to supply the greatest demand for spectrum whether through expansion of existing networks as well as diversification into the provision of broadband services. Notwithstanding, several major players (regulators, service providers, equipment manufacturers) in the global telecommunications sector have been investing in advance wireless technologies (AWTs) with a view to improving spectrum efficiency. AWTs possess features of dynamic re-configurability and "intelligent" spectrum access agility. Consequently, spectrum managers are now focused on spectrum sharing approaches such as: Authorization Regimes, TV White Space, Geolocation Database, and Cognitive Radio & Intelligent Network Selection. However, a significant and sustained technical research and development effort is required to help move many of these technologies into the mainstream.<sup>2</sup>

Locally, by all indications, stakeholders do intend to continue utilizing the spectrum and at an increased rate based on the trend and expectations. The SMA also recognizes its role in facilitating Jamaica's Vision 2030 plans and the part it must play if Jamaica is to achieve the stated goals and outcomes. The trend is towards a technology driven society and as alluded to earlier, fixed and mobile communications, sound and television broadcasting, aviation, maritime transport, defence, medical electronics, emergency services, security services, radio astronomy, space research, public safety, as well as many other applications, all make extensive use of the radio spectrum<sup>3</sup>. Jamaica, like most countries, is seeking to become a technology enabled society with each industry searching for ways to leverage technology, many utilizing the spectrum as the preferred medium in order to operate more efficiently.

## 5.0 FUNCTIONS OF THE SMA

The core functions of the Authority are:

- ✓ Planning the use of the spectrum and allocating frequencies in a way which will minimize interference.
- ✓ Monitoring users of the radio spectrum to ensure compliance and minimal interference.
- ✓ Proactive monitoring of the spectrum to identify and eliminate cases of interference reported by spectrum users.
- ✓ Licensing new users of the spectrum.
- ✓ Collection of spectrum licence fees which are remitted to the Government's Consolidated Fund.
- ✓ Providing advice to the Government both with respect to policy and legal issues concerning the spectrum.
- ✓ Representing Jamaica within regional and international telecommunications bodies.

<sup>2</sup> Spectrum Sharing Research & Development,

<http://www.ituonline.org/its/default.asp?process=Search&Page=2&Paper%3D10-20-11.pdf>

<sup>3</sup> <http://www.etsi.org/technologies-clusters/technologies/radio/radio-spectrum>

## 6.0 PRIORITY POLICY ISSUES, OBJECTIVES AND BUDGETARY ALLOCATION FOR FY 2014/15.

### 6.1 PRIORITY POLICY ISSUES

- *Financial prudence and stability;*
- *Providing customer oriented service as per established standards;*
- *Establishing a legislative framework that empowers the Authority; and*
- *The development and continued upgrade of institutional competence (human and capital resources).*

### 6.2 OBJECTIVES

The objectives that are linked to specific strategies as identified by the Authority for the period were, to:

- Ensure sustainability in funding (Operational and Development) for the Authority.
- Optimize the operating cost of the Authority.
- Provide reasonable revenues to the Government from the use of the spectrum.
- Achieve operational efficiencies in all areas to promote business development.
- Promote the development of wireless communication in Jamaica, through the provision of the appropriate and effective legislative, regulatory, and operating policy framework.
- Build and strengthen the resources (human and physical capacity) of the organization.
- Ensure that internal processes are in keeping with local and international best practices.
- To introduce more efficient systems of cooling and lighting, and reduce consumption of energy.

### 6.3 BUDGET

The Authority's overall budget (operating and capital) submission that was approved totalled \$411.24M, of which \$268.82M and \$142.42M were proposed for operating and capital expenditures, respectively.

## 7.0 HIGHLIGHTS OF PERFORMANCE FOR FY 2014/2015

Much to the efforts of the staff, the guidance of the Board of Directors and the support of the Ministry of Science, Technology, Energy and Mining (MSTEM), the SMA was able to effectively carry-out its core operational activities of licensing (new and renewal), interference management and financial management. Overall, in each category the SMA was able to exceed all the Key Performance Indicators (KPI) established for the FY during the planning period. Of significance is the quality standards established by the SMA that are comparable to international best practice, which forms the basis for the SMA's established KPIs.

7.1 LICENSING

*Processing of New Applications* - Processing as at 2015 January 31 resulted in 198 applications granted. The SMA is projecting for an additional 30 applications to be granted for the remaining 2 months in the FY2014/2015. The projected total for the 12 months ending 2015 March 31 is therefore 228 applications granted. This performance is well above the average of 90 applications granted, for the past 5 years, a clear indication of the increased activity within the sector. Of the 228 applications projected to be granted, the SMA is projecting that at a minimum approximately 96% will be processed within their respective established standard processing time, based on the un-audited performance of 99% as at 2015 January 31. **The KPI is 80%**. The table below lists the standard processing times for processing of applications.

KPI	TARGET		PERFORMANCE
	LICENCE TYPE	PROCESSING TIME	
80% of new applications granted within time	Aeronautical	15	96%
	Amateur and Alien Amateur	15	
	Citizen Band	15	
	Private Radio	30	
	VSAT	25	
	Maritime (None MAJ)	15	
	Maritime (Perm)	3	
	Maritime (Temp)	1	
	GMDSS	10	

*Renewal Licences* - The SMA is projecting renewal of 345 licences for the FY, which represents a performance rate of 92%. The FY's target was 395 licences; however, there were 25 cancellations, and 17 additions; which had a minus 8 net effect on the target bringing it to 387. Note that licences are only renewed after receipt of payment.

KPI	Adjusted Target	Performance
85% of renewable licences	387	92%

Approximately 99% of the 387 licences projected to be renewed are projected to be processed within the established processing standard time, (within 5 days). **The key performance indicator for this activity is 90%**.

KPI	Target	Performance
90% of licences renewed	within 5 days	99%

## 7.2 INTERFERENCE MANAGEMENT

Users of the radio frequency spectrum at times experience interference on their systems. This may be due to technical problems with the equipment of the user or may emanate from other users, licensed and unlicensed. The SMA responds expeditiously to identify the cause and resolve all cases of interference, through the use of its Radio Monitoring and Direction Finding Systems (RMDFS) and mobile monitoring vehicle. The SMA works with the users to ensure that all cases of interference are resolved completely and in a timely manner.

For the FY, the SMA is projecting to resolve 15 of the 17 cases of interference investigated. Of the 15 cases projected to be resolved, all or 100% is projected to be resolved within the standard processing time, for the FY. This performance rate is above the KPI of 90% for time taken to resolve interferences.

## 7.3 LEGAL, POLICY AND REGULATORY

During the FY, the SMA executed its mandate with respect to legal, policy and regulatory issues through, *inter alia*, the following activities:

### Caribbean Telecommunications Unions (CTU)

The SMA participated on the Spectrum Management Task Force (SMTF) that is integrally involved in the Harmonized Caribbean Spectrum Planning and Management (HCSP&M) Project, with technical cooperation support from the Inter-American Development Bank (IDB) and Compete Caribbean. Together, their support of the project funds the participation of fourteen of CTU member countries while making provision for other Caribbean countries to benefit from the work of the project. The specific objective of the Project is to deepen the harmonization of spectrum planning and management policies and practices across the Caribbean Region.

### Expressions of Interest

The SMA issued an invitation for Expression of Interest (EOI) in 2013 November with respect to the proposed licensing of spectrum in the 1800 MHz, 1900 MHz, 1700/2100 MHz and 2.5/2.6 GHz bands. On 2014 June 13 the Minister directed the SMA to licence the spectrum available in the respective bands, on a first come first serve basis, (based on the results of the study), and that the Spectrum Pricing Policy dated 2014 March 31 should be applied.

### TV White Space

The SMA participated in meetings and workshop during the FY, in relation to a pilot project to launch television white space technology in Jamaica. The project is being coordinated by the United States Agency for

International Development (USAID)/NetHope Global Broadband Alliance, in collaboration with the Universal Service Fund (USF).

### **Converged Regulator**

The SMA provided support and participated in consultative sessions with the MSTEM and a consortium of Regulaid BV and Jacobs, Cordova and Associates, in relation to the creation of a Converged Regulator for the communications industry.

## **7.4 FINANCIAL (PROJECTED)**

### **EXPENDITURE VS. BUDGET**

The SMA's projected expenditure for the FY is \$232.87M. This is well within the budgeted expenditure target of \$268.82M. The vast majority of the SMA's expenditure is within budget, or will not materialize for the FY. Efforts were made to reduce cost during the year, to include, the implementation of specific energy cost savings measures.

### **INCOME AND COLLECTION**

Total income for the FY is projected to be at \$307.48M, which is above the budget target of \$293.03M. The projected result is primarily influenced by the realization of interest income, significantly above that which was projected, as the SMA's bank balance was higher than projected since savings were realized from recurrent expenditures and there were delays with respect to expenditures for construction works at the Harbour Street location. Revenue earned relating to processing fees was also above expectations.

### **REGULATORY FEES**

Regulatory fees are projected at approximately \$263.26M; whilst the budgeted amount was \$269.85M. Anticipated new business in the cellular market was not realized during the FY.

### **PROCESSING FEES**

Processing fees are primarily charged for new business. For the 2014/15 FY, the SMA is projecting to collect \$8.68M, which is above the budgeted target of \$5.88M. This was due to the overall increase in use of wireless technology, as mentioned earlier (7.1 Licences).

### **SPECTRUM LICENCE FEES**

Spectrum Licence Fees are collected on behalf of the GoJ and are remitted to the Consolidated Fund.

*Projected collection 2014/15: approximately \$689.80M and, Projected remittance to the Consolidated Fund: approx. \$672.17M (inclusive of \$1.53M b/f from previous FY). Fees collected in 2015 March to be remitted in 2015 April amounts to \$35.56M.*

## 8.0 MEDIUM TO LONG TERM FOCUS

Medium to long term focus on spectrum management will primarily be on the following:

- strengthening human and physical capacity;
- providing support to the MSTEM on efforts that will improve regulatory effectiveness - *inter alia*, the establishment of a Single Information and Communication Technology Regulator;
- exploring new sharing/licensing technology and methods;
- the installation of additional monitoring sites; and,
- acquisition of attendant equipment in support of a dynamic industry

## 9.0 PROGRAMMES AND TARGETS FOR FINANCIAL YEAR 2015/16

The planned activities of the SMA for the FY will include *inter-alia*:

- Pursuing the core functions of, licensing spectrum users, resolution of interference complaints according to established standards, monitoring and inspection to ensure the legitimate and efficient use of the spectrum, and collection of fees as targeted.
- Ensuring good corporate governance and statutory compliance within/by the Authority.
- Fulfilment of local, regional and international obligations, (particularly with respect to ITU's WRC-15).
- Performance Monitoring in order to achieve established targets and ensuring compliance with all statutory obligations.

### SUMMARY OF PRINCIPAL PERFORMANCE TARGETS FOR 2015/16

	TARGET	KEY PERFORMANCE INDICATOR (KPI)
Revenues	\$293.86M	95% of target
Spectrum licence fees Collected	\$682.12M	80% of target
Spectrum licence fees Remitted	\$682.12M	Remit all fees collected up to Feb. 2015
Expenditure	\$285.38M	Within Target
Number of licences to be Renewed*	285 Reg Fees 404 Spec Fees	85% of target
Number of Interference Cases resolved	All reported cases	85% of target

\* Please note that not all licensees pay regulatory fees, however they all pay spectrum license fees.

## 10.0 BUDGETARY PROPOSAL FOR FINANCIAL YEAR 2015/16

For the FY 2015/16, the SMA proposed a budget of \$480.97M as follows:

Capital Expenditure \$195.59M



Operating Expenditure                      \$285.38M

Of the capital budget, \$150.35M is allocated for the installation of two new RMDFS sites in Portland and St. Elizabeth, in addition to upgrades and replacement parts. This is to be funded from the SMA's reserves. The total income target of \$293.86M is projected to yield a marginal surplus. The various income components are:

• Regulatory Fees -	\$274.41M
• Processing Fees -	\$ 5.29M
• Interest Income -	\$ 14.12M
• Other Income -	<u>\$ 0.04M</u>
<b>TOTAL</b>	<b>\$293.86M</b>

For the FY 2015/16 the SMA is projected to earn total income totalling \$293.86M to meet its recurrent budgetary needs. Of the total income, the SMA is expecting \$274.41M to be funded through regulatory fees primarily from existing spectrum users, but also includes projections for new users; the remainder being funded through processing fees, interest income and other income.

It should also be noted that the base Regulatory Fees charged to cellular service providers has been adjusted by an inflationary factor of 7.5%. This is within the targeted inflation rate of between 7% and 9% for the 2014/15 FY reported by the Bank of Jamaica.

*Recurrent Budget*

The table below summarizes the major items in the recurrent budget for the 2015/2016 FY, indicating that the recurrent budget is approximately \$285.38M.

**Summary of Recurrent Budget for 2015/2016 FY**

Categories of Cost	J\$M
Salaries & Related Staff Costs	147.49
Other Operating Costs	14.93
Administrative Costs	80.42
Non-Operating Expenses	42.54
<b>Total (Approx.)</b>	<b>285.38</b>

1. Salary and Related Costs - Salary & related costs, staff welfare; Contract/Temporary workers
2. Other Operating Cost - Board fees and expenses; Motor vehicle expenses; Repair & Maintenance (P, P & E); Travel; ASMS/RMDFS System maintenance.
3. Administrative Cost - Professional fees; ICT Promotion; Training & Development; Meetings - Local/Overseas; Advertising & Public Relations; Leased Office, maintenance & parking; Insurance; Telephone; Security; Stationery, Postage

& Courier; General Office Expenses; Subscription and books; Data processing expense; Bank Charges & interest.

4. Total Non-Operating Expenses - Bad Debt; Depreciation.



Phillip Paulwell

Minister

Science, Technology, Energy & Mining

April 13, 2015

MINISTRY PAPER NO: \_\_\_\_\_

## PERFORMANCE OF THE UNIVERSAL SERVICE FUND FOR FINANCIAL YEAR 2014/2015 AND FOCUS FOR FINANCIAL YEAR 2015/2016

### 1.0 PURPOSE OF MINISTRY PAPER

The purpose of this document is to update Parliament and the public in respect of the performance of the Universal Service Fund (USF or The Fund) for the Financial Year 2014/2015 and its focus for the Financial Year 2015/2016.

### 2.0 MISSION

The Mission of the Organization is to facilitate the provision of universal access to Internet services by stimulating and accelerating the deployment of broadband and related services island-wide. This will be achieved through the effective collection and astute management of the universal service levy and disbursing such funds in a transparent and non-discriminatory manner to finance appropriate projects. Additionally, the Institution will continue to analyse, propose, and monitor projects of a universal service nature, which fall within its mandate.

### 3.0 CORE FUNCTIONS

The Fund will continue to pursue the mandate outlined in the Corporate Plan and anticipates an acceleration and diversification of the projects during next year. The resources available will be directed toward fulfilling the Organization's core functions and mandate which are summarized as follows:-

- Collecting the Universal Service Obligation service charges ("the levy") from telecommunication companies;
- Investing any funds not immediately required for approved projects in approved financial institutions;
- Analysing projects of a universal service obligation nature and making recommendations for approval of funding;
- Disbursing funds for the implementation of approved projects;
- Monitoring the implementation of projects; and
- Managing and accounting for funds collected and disbursed.

### 4.0 OBJECTIVES

4.1 The primary operating objectives of the USF include:

- Providing additional connectivity to the approved island-wide broadband network designed to facilitate inter-institutional connectivity and access to the information super highway for select government agencies as approved by the Board of Management;
- Ensuring the collection of the levy through the Terminating Carriers; and

- Identifying, executing, and funding suitable projects island-wide, through which the government's universal service obligation will be advanced;

4.2 The major strategies pursued for achieving these objectives include the following:

- Managing contracts with the approved contractors, LIME and Flow, for the provisioning of an island-wide high speed data network to provide broadband connectivity including access to the information superhighway;
- collaborating with the Jamaica Library Service to increase and enhance its administrative capacity and providing wider public access to the Internet;
- collaborating with the Postal Corporation of Jamaica to increase and enhance its administrative capacity and providing wider public access to the Internet; and
- Collaborating with the e-Learning Jamaica Company Limited to advance the transformation of the teaching and learning experiences in public and other select educational institutions. The ultimate objective is to stimulate an improved knowledge delivery process thus ensuring an improvement in the level of education achieved by secondary and high school leavers;
- Providing Internet and campus-wide wireless services at schools selected for the Tablets in Schools pilot project;
- Advancing scholarship in the Information and Communication Technology field through the awarding of post graduate scholarships at local universities;
- collaborating with other governmental and non-governmental organizations to identify suitable communities island-wide, which meet defined criteria, for the establishment of community access points; and
- Collaborating with the University of the West Indies to upgrade its remaining seven open campuses to provide easier and wider access to tertiary education to Jamaicans throughout the country, and to provide a wireless data network for its Mona campus and surrounding communities.

## 5.0 PHYSICAL ACHIEVEMENTS FOR FINANCIAL YEAR 2014/2015

- **Broadband Network:** Construction work on the island-wide broadband network intensified during the year, with fourteen institutions connected during the year, increasing the number of connected institutions to three hundred and seventy-seven. Details of the programme are summarized in table 1 below.

**Table 1: BROADBAND NETWORK CONNECTION STATUS**

INSTITUTIONS	CONNECTIONS 2014/2015	TOTAL IN SERVICE	TOTAL OUTSTANDING
Schools	4	208	-
Libraries	4	41	-
Post Offices	3	68	3

INSTITUTIONS	CONNECTED 2014/2015	TOTAL IN SERVICE	TOTAL OUTSTANDING
Health Facilities	3	60	-
Jamaica Constabulary Offices	0	0	73
<b>TOTAL</b>	<b>14</b>	<b>377</b>	<b>76</b>

- Community Access Points:** During the year, forty-five (45) applications for the establishment of community access points, providing Internet access to community residents island-wide, were processed and approved in the gross amount of \$181.63, million. Forty-four (44) community access point projects were completed and commissioned to service during the year at a gross cost of \$172.70 million. To date, there are two hundred and ten (210) Community Access Points commissioned to service throughout the fourteen (14) parishes at a gross capital cost of \$619,341,325.06. Tables 2 and 3 below provide details of community access point projects completed during the year.

**Table 2: SUMMARY OF CAP PROJECTS APPROVED AND COMPLETED APRIL 1, 2014 - MARCH 31, 2015**

MONTH	APPROVED	VALUE (J\$)	COMPLETED	MINAL COST (J\$)
April (2014)			7	27,253,786
May	15	59,884,460	10	33,336,935
June	8	37,254,121	5	15,725,453
July			1	5,754,925
August	8	28,349,730	4	8,720,920
September			7	25,855,968
October	7	33,417,300	3	13,603,215
November	7	22,723,480	3	8,646,861
December			4	12,273,560
January (2015)			6	21,527,792
February				
March				
<b>TOTAL</b>	<b>45</b>	<b>181,629,091</b>	<b>50</b>	<b>172,699,415</b>

**Table 3: COMMUNITY ACCESS POINT PROJECTS COMPLETED 2014/2015**

#	PROJECT LOCATION	PARISH
1	Fruitful Vale	Portland
2	Olympic Gardens	St. Andrew
3	Good Samaritan Inn	St. Andrew
4	Cavalier All Age School	St. Andrew
5	Oberlin High School	St. Andrew
6	Treadways	St. Catherine

#	PROJECT LOCATION	PARISH
7	Joy Town	St. Andrew
8	Glengoffe	St. Catherine
9	Red Hills Primary School	St. Andrew
10	Rock Hall All Age School	St. Andrew
11	Airy Castle Primary School	St. Thomas
12	Bath Primary School	St. Thomas
13	Bethel New Testament Church	St. Andrew
14	Westchester	St. Catherine
15	Commodore	St. Catherine
16	Portmore Holiness Christian Church	St. Catherine
17	Seivwright Gardens	St. Andrew
18	Nation Centre for Youth Development - May Pen	Clarendon
19	National Centre for Youth Development - Santa Cruz	St. Elizabeth
20	Jeffrey Town	St. Mary
21	Children First Agency - Spanish Town	St. Catherine
22	Victory Open Bible - Lime Tree	St. Catherine
23	Ballads Valley Primary School	St. Elizabeth
24	Eastern Peace Centre - Windward Road	St. Andrew
25	Holy Spirit Foundation	St. Elizabeth
26	Caribbean Palm Estate	St. Andrew
27	Independence City	St. Catherine
28	Rise to Life Centre - Church of God of Prophecy	Manchester
29	Harmons Valley	Manchester
30	Rosend Technology Centre	St. Mary
31	Life Centre Church of God of Prophecy	St. Catherine
32	Canterbury - Montego Bay	St. James
33	Spring Village Development Foundation	St. Catherine
34	Ebony Vale Homework Centre	St. Catherine
35	Salt Spring Primary School	St. James
36	Llandilo Centre	Westmoreland
37	Greater Brown's Town	St. Andrew
38	Top Hill Citizen's Association	Manchester
39	Jamaica Red Cross - Twickenham Park	St. Catherine
40	Inverness Primary & Infant School	St. Ann
41	Farm Primary & Junior High School	St. James
42	Top Range Centre	St. Andrew
43	Richmond Community E-Learning Centre	Manchester
44	Sunbury United Church	Clarendon

- **Tablets in Schools Pilot Project:** In support of the Tablets in Schools Project the Universal Service Fund established broadband Internet service to thirty-eight, schools, twenty-six of which had no Internet service hitherto to this intervention.

The USF also established campus-wide wireless access at thirty-one schools to enable the students, teachers and administrators to access the Internet across the schools' campuses. Limited capacity was also provided to allow visitors Internet access from the campuses.

- **Court Management Services:** Funding of approximately \$19 million was provided to the Court Management Services for technological upgrading of the court management services, thereby contributing to the improvement in the efficiency of the discharge of justice in the country. Equipment procured under this funding allocation have been distributed to court offices across the country and include thirty desktop computers, sixteen laptop computers, eight printers, three servers and five scanners.
- **Agriculture:** This critical national economic sub-sector was a significant beneficiary of USF funding through a contribution of \$7 million to the Jamaica Agriculture Society to establish an Agricultural Commodities Market and Call Centre.
- **University of the West Indies:** In support of providing campus-wide wireless coverage at the University of the West Indies, Mona Campus, funding in the amount of \$72.64 million was provided to the University of the West Indies during 2014/2015. Students, faculty, administrators and visitors to the campus are now enjoying the service.
- **Jamaica Foundation for Lifelong Learning:** Out of recognition that the mandate of this organization intersects with, and is complimentary to that of the USF, approval was given for funding support in the amount of \$18.95 million to purchase computers related equipment and to provide internet connectivity to upgrade fourteen (14) Adult Education Centres island-wide to expand access to the general public to the High School Diploma Equivalency Programme.
- **Public Broadcasting Corporation:** This organization plans to develop and launch a highly interactive Internet portal for disseminating valuable information to the general public on a continuous basis. Their application for support funding in the amount of \$7 million was, therefore, approved to facilitate that initiative, which will be launched during the 2015/2016 financial year.
- **Disabled Community:** This important constituency will always be within the focus of the USF to ensure that they remain abreast of technological developments. Funding was reserved for them and during 2014/2015 \$12.66 million was disbursed to facilitate developments in their interest, including funding support for an international conference in September 2014, the launch of their bespoke website and the provision of computers and constituency specific software to facilitate easier access to Internet services.

- **ICT Scholarships:** The Universal Service Fund awarded three post graduate scholarships for students pursuing advanced studies in the field of Information and Communication Technology. These scholarships are valued at \$500,000 each per academic year and are tenable, one each, at the University of the West Indies, University of Technology and Northern Caribbean University reading for the Master of Science degrees in Computer-Based Management Information Systems, Information Systems Management and Information Systems, respectively.
- **Donations:** The Universal Service Fund continued to satisfy limited technological needs at schools and other institutions and organizations through the donation of desktop computers, laptop computers, tablet computers and other necessary equipment to enhance their existence.

## 6.0 FINANCIAL PERFORMANCE FOR 2014/2015

Total levy collections for the year reflected a marginal increase of 0.05% over financial year 2014/2015. Despite this marginal monetary increase the diminution of inbound international telephony traffic continued owing to alternative strategies being exploited for completing international telephony calls and suspected bypass operations. The compensating factor that accounted for the marginal monetary increase is the deterioration of the Jamaican dollar against the United States dollar over the year interest income however; surpassed budget owing to a higher level of investment than planned.

### 6.1 Revenue and Expenditure

For the Financial year 2014/2015, the Universal Service Fund established a revenue target of \$998.80 million. Actual revenue of \$1.460 billion exceeded budget by \$461.26 million. Revenue details are summarized in table 4 below.

**Table 4: REVENUE SUMMARY 2014/2015**

REVENUE	BUDGET (\$M)	ACTUAL (\$M)
Service Fees	984.00	1,363.03
Interest Income	14.80	97.03
<b>TOTAL</b>	<b>998.80</b>	<b>1,460.06</b>

Total recurrent expenditure (minus depreciation) for the financial year 2014/2015 amounted to \$68.69 million against a budget of \$103.38 million. Capital expenditure for the year amounted to \$1.630 billion against a budget of \$1.812 billion. The under expenditure in this category resulted from delays in project execution and deferral of some major projects.

### 6.2 Levy Payments.

Total collections since the inception of the current levy regime, on June 1, 2005 amounted to \$12.323 billion as at 2015 March 31, as summarized in table 5 below.



**Table 5: SUMMARY OF ANNUAL LEVY COLLECTIONS - 2005-2015.**

FINANCIAL YEAR	ACTUAL COLLECTION (\$B)
2005/2006	\$1.298
2006/2007	\$1.260
2007/2008	\$1.249
2008/2009	\$1.453
2009/2010	\$1.310
2010/2011	\$1.227
2011/2012	\$0.953
2012/2013	\$1.121
2013/2014	\$1.191
2014/2015	\$1.250
<b>TOTAL</b>	<b>\$12.312</b>

**6.3 Carriers**

During the year the USF, once again, grappled with delinquencies in the timely remittance of levy payments. Continuous communication with terminating carriers was a feature of our operations to contain levy receivables within acceptable limits. Despite our best efforts to collect overdue balances, we were unsuccessful with one local carrier and had to seek redress through the legislature. To date, that matter involving an exposure of \$19 million, remains before the courts. Our lawyers are in the process of affirming a default judgement as the defendant has not filed a defence to our latest claim.

Another local carrier, which had a long overdue debt of \$31 million, and whose terminating service had been suspended, reached an agreement with the USF to liquidate the debt over time. Consequently, the terminating services of that carrier have been reinstated and the overdue debt has now been liquidated.

**7.0 FOCUS FOR 2015/2016 FINANCIAL YEAR**

**7.1 Completion of Projects**

The USF will concentrate on completing all approved projects to ensure wider availability of broadband access across the country, consistent with its mandate. It is anticipated that the island-wide broadband network will be expanded to provide additional connectivity for government institutions already benefitting from the service and to provide connectivity to other institutions, as required.

The USF will seek approval for a revised organizational structure and seek to secure all the requisite human resources appropriate for effectively discharging its expanded mandate. The USF will continue to strengthen its relationship with the challenged community island-wide to ensure that adequate facilities are provided for them to properly participate in all aspects of modern existence facilitated by information and communications technological evolutions.

The support infrastructure for second phase of the Tablets in Schools project will be delivered in time for the start of the 2015/2016 school year and approved funding will be disbursed to the e-Learning Company to execute its component of the project.

## 7.2 New Projects

### • **Jamaica Library Service**

The collaboration with the Jamaica Library Service will continue in order to expand internet access at their facilities, especially where demand has outstripped supply and the physical accommodation is available and to improve their administrative capacity. Additional libraries will also be connected to the broadband network during the year.

### • **Postal Corporation of Jamaica**

Work will continue, in collaboration with the Postal Corporation to extend internet services at selected post offices island-wide. It is expected that the infrastructural upgrade of the Postal Corporation will be extended to equip additional post offices island-wide with public internet facilities.

### • **Community Access Points**

The USF will continue to collaborate with specialized agencies to assist in identifying suitable communities island-wide for the establishment of additional Community Access Points. The National Housing Trust, the Social Development Commission, and the Church Community will continue to be important partners in this regard. The USF plans to identify at least sixty additional communities for the establishment of access points during fiscal 2015/2016 at an estimated cost of \$180 million. Consistent with our mandate for national coverage, every effort will be made to ensure the widest possible distribution of these access points across the country.

### • **Broadband Network Expansion**

The USF has extended the utility of the island-wide broadband network by providing connectivity to sixty Ministry of Health facilities (Hospitals, Health Centres and Regional Offices). The Ministry of Health's requirement is for connectivity to three hundred and twenty-four facilities. Consequently, the USF will seek to connect additional Ministry of Health facilities during 2015/2016.

The USF anticipates requests from the other governmental institutions for connections to the broadband network. Subject to available resources, these requests will be honoured.

### • **Public Wireless Services**

The anticipated public WiFi facilities were deployed at the Petroleum Corporation of Jamaica's head office building and upgraded at the Office of

the Prime Minister. Consideration will be given to the provision of public wireless services in strategic communities during 2015/2016.

- **Wireless Broadband Internet:** Work commenced during 2014/2015 to complete a pilot wireless broadband Internet project to provide internet service to rural communities using available television white space frequencies. The pilot project is scheduled for completion during 2015/2016.

- **International Traffic**

The diminution of inbound international voice telephony traffic and the independent validation of that traffic has always been a concern of the USF. During 2015/2016 the USF will, again, seek to deploy a trial system to quantify and disaggregate that traffic stream with a view to implementing necessary changes to safeguard the existing levy regime.



Hon. Phillip Paulwell  
**Minister**

Science, Technology, Energy, and Mining  
April 13, 2015

# ENERGY

MINISTRY PAPER NO: \_\_\_\_\_

**PERFORMANCE OF THE BOARD OF EXAMINERS  
FOR FINANCIAL YEAR 2014/2015 AND PRIORITY FOCUS FOR FINANCIAL  
YEAR 2015/2016**

**1.0 PURPOSE OF MINISTRY PAPER**

The purpose of this Ministry Paper is to present information on the performance of the Board of Examiners (BOE) (licensing of Electricians) for the year 2014/15.

**2.0 ROLE AND FUNCTION OF THE BOARD OF EXAMINERS**

The BOE was established in 1958 under Section 36 of the Electric Lighting Law.

The main functions of the Board, as mandated by the Act, are as follows:

- To conduct electricians licensing examinations,
- To grant electrician license to persons desirous of installing electric light, electric power, telephone or electric bells.

The Core Functions of the Board of Examiners are:

1. The administration of the written and oral examinations for prospective electricians pursuant to licensing;
2. To ensure that licensed electricians' carry out the practicing of their trade in conformity with existing regulations. Hence, maintaining the integrity of the electrical installation trade;
3. Facilitate consultation with educational institutions, which undertake training and development initiatives in the electrical installation trade.
4. Liaise with regulatory agencies that monitors and review standards for the safe and secure practices of electricians.

The primary daily operations of the Board of Examiners consist of the following:

- Accepting and processing of applications for the electrician licensing examinations that are held twice per year, usually in April and August.
- Processing the renewal of electrician licenses.
- Maintenance of the Registry of Licensed Electricians
- Handling queries and customer complaints against any licensed electrician.

**2.1 Mission Statement**

To establish a licensing authority which will prepare a cadre of professional electricians who are certified to national, regional and international standard?

**2.2 Strategic Objectives**

The following Strategic Objectives are desired achievements of the BOE in order to ensure the achievement of the National Vision 2030 Jamaica.

The Board of Examiners plays a managing role to:

- 2.1.1 Ensure examination, issuance and renewal of certificates of competence to electricians;
- 2.1.2 Evaluate complaints, malpractice and misconduct in the electrical wiring trade of licensed electricians;
- 2.1.3 Maintain acceptable standards in the electrical trade in collaboration with Bureau of Standards; and
- 2.1.4 Fostering of institutional co-operation as well as the provision of training in electrical certification at the University of Technology (UTECH) and other institutions.

### 3.0 **PERFORMANCE HIGHLIGHTS/ INDICATORS FOR 2014/15**

The Board of Examiners, with limited resources, financial as well as human, continued with the execution of its strategic objectives, some of which are highlighted below:

#### 3.1 **INCREASE EFFICIENCY AND EFFECTIVENESS**

- 3.1.1 Implement a comprehensive information management system to capture, analyze, store and disseminate information to customer and stakeholders.
- 3.1.2 Increase the frequency and administration procedures of the oral and written examination.
- 3.1.3 Implement a communication strategy to increase the awareness and image of the Statutory Body.

#### 3.2 **IMPROVE THE STANDARDS OF THE ELECTRICAL SECTOR INDUSTRY**

- 3.2.1 Partnering with the Bureau of Standards to improve the practices, codes and regulations governing the industry to internationally benchmarked standards.
- 3.2.2 Adjusting the standards of the oral and written examinations in line with revised local, regional and international practices.
- 3.2.3 Conduct consultation and awareness interventions with stakeholders in the public and private sectors.
- 3.2.4 Revising the minimum basic requirements for acquiring full licensed electrician status.
- 3.2.5 Implement a system of tracking electricians, in order to reduce sub-standard service(s) within the trade.
- 3.2.6 Instituted an amnesty for delinquent licensed electricians.

### 4.0 **PROJECTIONS FOR 2015/16**

During the fiscal year 2015/16, the Board of Examiners will continue to work closely with relevant ministries, agencies, stakeholders and development institutions to ensure proper monitoring and evaluation of its activities.

The Board will concentrate its limited resources in key areas in line with the national priorities for overcoming the current economic difficulties. Hence, the following initiatives will be pursued:

#### 4.1 **ACHIEVING SELF-SUSTAINABILITY**

- 4.1.1 Implement a revised fee structure for all products and services in line with current inflationary rates and market conditions.

- 4.2 DEVELOP A COMPETENCY MODULE OF THE LICENSING OF ELECTRICIANS
- 4.2.1 Competency Module to augment the examination process. It is proposed that the licensing process will move from a two stage process to a three stage one consisting of:
- 4.2.1.1 Written Examination,
- 4.2.1.2 Successful completion of a competency programme,
- 4.2.1.3 Oral Examination (if required),
- 4.3 Standardize and streamlining the licensing regime by implementing categories of licenses.
- 4.4 To institute an electricians apprenticeship programme in collaboration with the HEART Trust/NTA and the Caribbean Maritime Institute.
- 4.5 Continuing education requirements for the renewal of electrician licenses.
- 4.6 Instituted an amnesty for delinquent licensed electricians.
- 4.7 Expanded the pool of examination questions by collaborating with UTech, HEART Trust/NTA and other institutions.
- 4.8 The rental of cost-effective locations for the hosting of the examination centres.
- 4.9 Increase the number of examinations held per year from one to two.
- 4.10 Computerizing the marking of the examination scripts by the purchasing of OMR software.
- 4.11 Improve the ICT infrastructure.
- 4.12 BUILD A MODERN TECHNOLOGY INFRASTRUCTURE
- 4.12.1 Automate the approval, evaluation, certification and recertification processes.
- 4.13 CREATE A WORLD CLASS PROFESSIONAL AGENCY
- 4.13.1 Align resources with the operational needs of the agency.
- 4.13.2 Implement a revised leadership and management structure in line with the Executive Agency mandate.
- 4.13.3 Implement a performance-driven human resource management strategy.
- 4.13.4 Embed a structured corporate and operational planning environment.
- 4.14 Establish strategic alliances with regional and international training and accreditation agencies with a view to securing licensing for local practitioners in the industry.
- 4.15 Implement a 100 percent e-commerce environment.
- 4.16 Implement an enterprise web-enabled database for the agency.



Phillip Paulwell

**Minister**

Science, Technology, Energy and Mining

April 13, 2015

MINISTRY PAPER NO: \_\_\_\_\_

## PERFORMANCE OF THE PETROLEUM CORPORATION OF JAMAICA FOR FINANCIAL YEAR 2014/2015 AND FOCUS FOR FINANCIAL YEAR 2015/2016

### 1.0 PURPOSE OF THE MINISTRY PAPER

This Ministry Paper is intended to inform Parliament and the public on the performance of the Petroleum Corporation of Jamaica (PCJ) during the 2014/2015 Financial Year and its focus for the 2015/2016 Financial Year.

### 2.0 CORPORATE PROFILE

The Petroleum Corporation of Jamaica (PCJ) is the government entity mandated to manage the country's energy needs in a manner that supports the overall strategy for national development. Established in 1979 the PCJ is a statutory Corporation under the Ministry of Science Technology Energy and Mining (MSTEM).

### 3.0 THE GOVERNMENT'S VISION

The Government of Jamaica's Vision for the energy sector is for "A modern, efficient, diversified and environmentally sustainable energy sector providing an affordable and accessible energy supply with long-term energy security, supported by informed public behaviour on energy issues and an appropriate policy, regulatory and institutional framework".

### 4.0 PCJ'S MANDATE

The mandate of the PCJ is to develop and promote indigenous energy resources, to prevent adverse effects on the environment and to assist the government in realizing the goals of the National Energy Policy.

### 5.0 MISSION STATEMENT

The PCJ, as mandated by the Petroleum Act of 1979, will undertake the development and promotion of Jamaica's energy resources and will seek, where necessary, business partners through joint ventures with the private sector.

The Corporation will conduct its affairs in a manner beneficial to Jamaica.

The Corporation will act with integrity and will strive for excellence in all its operations.

### 6.0 VISION STATEMENT

Our vision is to be a comprehensive supplier of energy, delivering a diverse efficient energy mix while showing respect for established values and regulations.

### 7.0 ROLE AND FUNCTIONS

The PCJ is the government entity charged with facilitating energy security. The primary focus is to reduce the country's dependence on imported fuel while securing the affordable, sustainable energy supplies which are necessary to realize economic growth.



The Petroleum Act gives the PCJ the exclusive right to explore and develop the petroleum resources of the country. The PCJ is also at the forefront of the drive to develop renewable energy resources. Our core functions include:

- The development and management of petroleum resources either alone or in association with third party contractors.
- Undertaking the exploration, development and management of petroleum resources.
- The acquisition, construction and operation of refining or processing facilities, marketing facilities, pipeline facilities, tankers, trucks and other facilities for the transportation of petroleum and petroleum products as well as facilities for storage or distribution of petroleum or petroleum products either alone or in association with contractors..
- Selling and otherwise dealing in petroleum and petroleum products either alone or in association with contractors.
- Leading communication on all energy matters.

The PCJ has three wholly owned subsidiaries:

Wigton Windfarm Limited operators of a 38.7MW wind farm complex in Manchester which accounts for 4.5% of the grid's generating capacity and 2.6% of Jamaica's electricity generation.

**Petrojam Ethanol Limited (PEL)** which focuses on the production, export and sale of anhydrous ethanol.

**Petroleum Company of Jamaica Limited (PETCOM)** which functions as the retail arm of the PCJ; with a network of 24 service stations and 14 LPG filling plants island wide and a remit which includes the marketing and sale of petrol, lubricants, liquefied petroleum gas (LPG) and industrial land fuels.

The PCJ has two joint venture companies:

**Petrojam Limited** which operates the state owned refinery, a 36,000 barrel per day facility located on Marcus Garvey Drive in Kingston and supplies Jamaica with a full range of domestic, transportation and industrial petroleum products. The PCJ has a 51% stake in Petrojam while Petróleos de Venezuela, S.A (PDVSA) has 49%.

**Jamaica Aircraft Refuelling Services (JARS)** which provides refuelling services at Jamaica's two largest airports, Norman Manley International and Donald Sangster International Airport. PCJ owns 49% of JARS and Air B/P owns 51%.

## **8.0 STRATEGIC PRIORITIES**

The PCJ's primary business objective is to **Facilitate Energy Security for Jamaica**. The organisation's strategy for achieving this objective centres on six strategic priorities.

### **9.0 Priority 1: Develop and promote Jamaica's energy resources**

- Contribute to a 30% reduction in the cost of energy supply by implementing projects of major national significance.
- Facilitate the development and implementation of Jamaica's hydro energy resources.
- Secure Production Sharing Agreements (PSAs) for Oil & Gas Exploration from reputable, experienced and committed explorers with a proven track record.
- Facilitate Waste to Energy Development.
- Institute a Research & Development Programme for major national energy programmes.

### **10.0 Priority 2: Ensure Financial Viability**

- Optimized Revenues from Investment, Property and Group Portfolio.
- Identify and exploit additional sources of revenue.
- Undertake projects that will ensure positive return on investment (ROI).
- Strengthen revenue collection processes/mechanisms.
- Major restoration and upgrading work on the Resource Centre Building.
- Implement Energy Solutions Operation (ESCO).

### **11.0 Priority 3: Align the Organisation for Major Project Implementation**

- Pursue partnerships with international players for major project implementation.
- Develop expertise in project management/ Establish PMO.

### **12.0 Priority 4: Organisational Development and Institutional Strengthening**

- Harness intellectual knowledge.
- Optimise business processes.
- Develop performance management systems.
- Improve procurement process.
- Preserve and protect intellectual property.

### **13.0 Priority 5: Enhance Corporate Image**

- Continued implementation of public sector energy efficiency intervention programme.
- Position PCJ as the National Energy Advisor by driving public education on energy issues.
- Expand Schools Energy Programme.

#### 14.0 Priority 6: Group Transformation

- Strengthen corporate governance.
- Improve group oversight.
- Improve operational efficiencies.
- Implement a shared services model for Corporate Services.

#### 15.0 BUDGETARY ALLOCATIONS FOR FINANCIAL YEAR 2014/2015

PURPOSE	BUDGETED \$'000
General Administrative Expenses: Inclusive of staffing, taxes, insurance, stationery, maintenance, professional fees, project management, business charges, public relations and community outreach, board expenses and depreciation	556,038
Building Maintenance: Including contracted services, utilities, staffing, maintenance and taxes.	186,989
Other Expenses: Corporate investment/contributions to Energy fund, contracted services and purchases, research, seminars, feasibility studies, regulatory fees and charges, and promotions.	124,192
<b>TOTAL</b>	<b>867,219</b>

PCJ is projecting to make net profit after tax of J\$1.29 billion against the original budget of J\$583.88 million for the financial year ending March 2015. The improved financial performance is attributable to higher income levels from commissions and interest while expenditures have been somewhat constrained. PCJ has also benefitted from unrealised foreign exchange gains from the higher than anticipated depreciation in currency.

The budget was predicated on commissions of J\$0.89 billion and Other Operating Income of J\$0.50 billion for a total inflow of J\$1.39 Billion. It is anticipated that PCJ will earn commissions of J\$1.50 billion and Other Operating Income of J\$0.51 billion for a total inflow of J\$2.01 billion for a positive additional inflow of J\$619.39 million or 44.51% over budget.

Commission Income is anticipated to be J\$606.45 million ahead of the budgeted J\$0.89 billion as the expected change in the commission from 1% to 0.5% has not occurred to date, it is still under negotiations and is anticipated to be concluded by the end of the fiscal year. The projections to the end of the financial year have assumed the 0.5% commission for the last quarter. The higher absolute value of commissions earned was

further enhanced by higher than anticipated exchange rates which assisted in providing higher commission values on conversion.

PCJ has embarked on the divestment of its subsidiary Petcom. This is not anticipated to have immediate impact on the Balance Sheet for March 31, 2015 but will impact the next financial year both in terms of operating income and balance sheet composition. The year 2014/15 was budgeted to reflect the sale of the assets used for Petcom operations; however, it is not anticipated to be completed before mid-next financial year hence the financial impact has been rolled until that time.

## 16.0 BUSINESS PERFORMANCE 2014/15

## 17.0 EXPECTED ALLOCATION FOR 2014/15

PURPOSE	BUDGETED \$'000
General Administrative Expenses: Inclusive of staffing, taxes, insurance, stationery, maintenance, professional fees, project management, business charges, public relations and community outreach, board expenses and depreciation	491,996
Building Maintenance: Including contracted services, utilities, staffing, maintenance and taxes.	129,818
Other Expenses: Corporate investment/contributions to Energy Fund, contracted services and purchases, research, seminars, feasibility studies, regulatory fees and charges, and promotions.	91,849
<b>TOTAL</b>	<b>716,663</b>

## 18.0 OIL AND GAS EXPLORATION

### 18.1 PRODUCTION SHARING AGREEMENT

The focused promotional campaign which the PCJ began in 2013 to promote oil and gas exploration bore fruit in 2014 with the signing of a Production Sharing Agreement (PSA) with Tullow Jamaica Limited. Tullow Jamaica is a wholly-owned subsidiary of Tullow Oil plc, a leading independent exploration company which is based in the United Kingdom.

Under the PSA, Tullow will undertake oil and gas exploration offshore Jamaica in the Walton Basin and the Morant Basin. The agreement, which became effective on November 1, 2014, allows Tullow to begin exploratory work on ten of Jamaica's 31 blocks and on a portion of another block. The blocks are located south of the island and cover approximately 32,065 square kilometres.

Over the first phases of the PSA the exploration work programme includes carrying out geological and geophysical surveys, environmental assessment and seismic data acquisition, processing and interpretation to make an evaluation of the presence of hydrocarbons beneath Jamaica's seabed. If these evaluations are favourable then the company can elect to proceed to the next phase of the agreement which will involve making a decision about drilling any exploratory wells.

The Exploration Phases of the PSA can last up to 7.5 years and if any wells contain oil and gas in quantities that allow for commercial level production, then the parties will move into the Production Phase of the Contract which can last between 17.5 and 19.5 years.

As the government entity with responsibility for contract implementation, the PCJ will oversee the entire process to ensure that the contract deliverables are achieved.

### 18.2 REVIEW OF GEOLOGICAL DATA

To develop a more comprehensive technical understanding of the offshore hydrocarbon basins of Jamaica the PCJ has also engaged the University of Houston, Texas to undertake a geological review of data provided by the PCJ. This evaluation will provide well needed scientific update to the hydrocarbon prospectivity of Jamaica and further scientific understanding of the emergence of the Caribbean geological plate.

### 18.3 REGIONAL ALLIANCES

In order to increase the understanding of the hydrocarbon potential of the regionally significant Nicaraguan Rise, the PCJ has formed strategic alliances with counterpart organisations in neighbouring territories with a view to sharing technical data and exploration experiences. During 2014/15 working relations were maintained with partner organisations in Colombia, Honduras, Nicaragua and Venezuela.

## 19.0 RENEWABLE ENERGY DEVELOPMENT

### 19.1 HYDRO

PCJ continues to spearhead the Government's thrust to develop Jamaica's renewable energy potential to provide viable alternatives for imported fossil fuels. Hydropower is one of the methods of generation aggressively being explored and to this end work continued on the Four River Project which was first undertaken in 2013.

The project is being implemented under the Energy Security and Efficiency Enhancement Project (ESEEP) which is being funded through a 2011 loan agreement between the Government of Jamaica and the World Bank. In 2013 a \$109 million contract was awarded to the Italian engineering firm, SP Studio Pietrangeli to evaluate the hydro power potential of five local rivers.

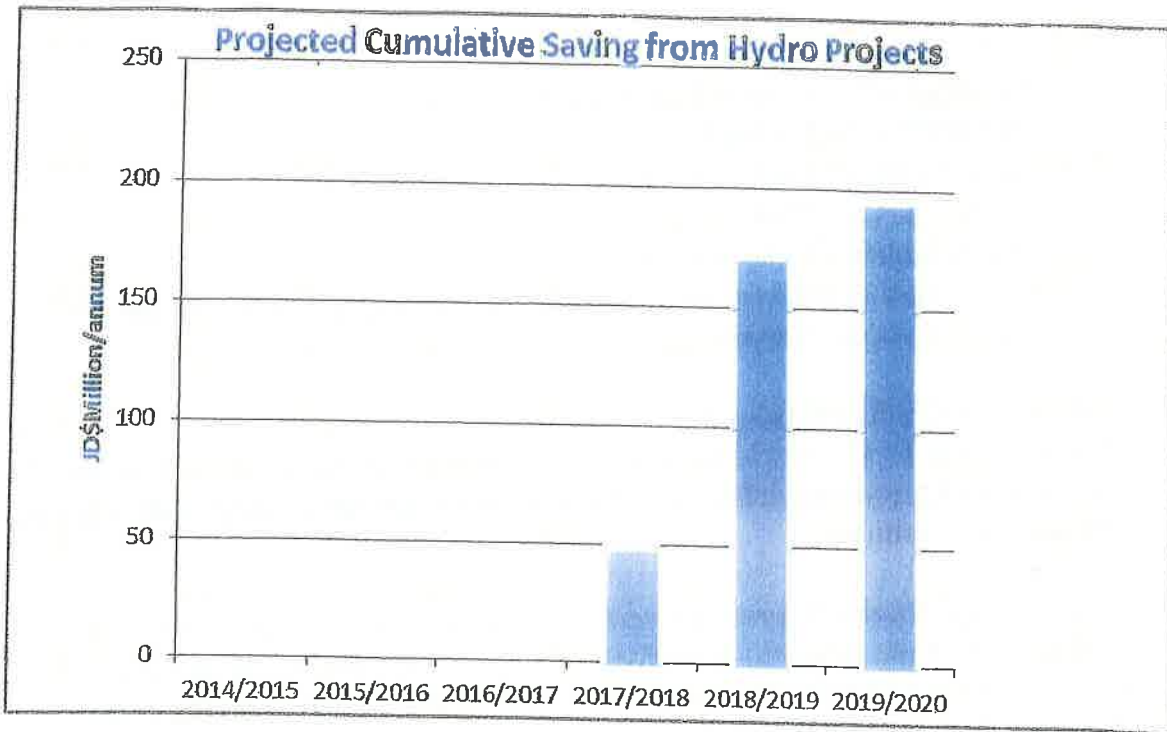
Following pre-feasibility studies in 2013 which identified more than 20MW in generating capacity, in 2014 full feasibility studies were conducted on the Rio Cobre

River in St. Catherine, the Negro River in St. Thomas, Martha Brae River in Trelawny and Spanish River in Portland.

MSTEM and PCJ are now seeking to use the findings from these studies; as well as data from previous assessments of Laughlands Great River, in St. Ann and Great River in St. James, to create packages to attract investment for the development of about 26MW in hydropower. If this potential is fully exploited it would double the country's hydro generating capacity. In addition, the combined impact of the six rivers could result in 95.7GWh in generation annually which would reduce Jamaica's oil demand by more than 56,300 barrels and yield savings of almost \$329 million. (See full breakdown in the table below).

2.0	13.9	8133	48,523,070
8.0	35.2	20712	122,736,900
2.3	7.01	4124	23,713,000
4.4	16.7	9324	56,485,300
8.0	18.0	10588	60,882,350
1.3	4.9	2882	16,573,530

The PCJ is projecting an implementation schedule which would see 2MW in hydropower coming on stream in 2017/18 which would generate approximately 13.9GWh. This would reduce Jamaica's demand for oil by almost 8,200 barrels annually and generate savings of J\$48.5 million per annum. An additional 8MW is projected for 2018/19 and another 2.3MW is anticipated in 2019/2020. The cumulative savings from this additional capacity will be J\$146.4 million per annum.



## 19.2 SOLAR

During 2014/15 considerable progress was also made with the implementation of a Solar PV Project under which photovoltaic systems will be installed at 15 schools and three public sector institutions. A contract valued at approximately J\$62 million was awarded for the procurement of the systems which will be installed in the 2015/16 fiscal year.

Collectively, the 18 systems will provide 232 Kilowatts peak power which equates to about 344,000 Kilowatt hours per year. This will result in savings of more than J\$15 million per year on the public sector energy bill. In addition, the systems are grid tied, which will allow the benefitting institutions to earn revenue by generating electricity to sell back to the grid.

The benefitting institutions are:

- Ardenne High
- Clarendon College
- Dintill Technical High School
- Glenmuir High School
- Hampton School for Girls
- Kingston High School
- Munro College
- Norman Manley High School
- Old Harbour High School
- Rose Hill Primary School

- St. Catherine High School
- St. Elizabeth Technical High School
- St. Hugh's High School
- Vere Technical High School
- Wolmer's Girls' School
- The Scientific Research Council
- The Office of Disaster Preparedness and Emergency Management (ODPEM)
- The Petroleum Corporation of Jamaica

## 20.0 ENERGY EFFICIENCY

As part of the PCJ's efforts to contribute to the reduction of the government's energy spend the Corporation continued to finance and implement energy efficiency projects at public sector facilities.

Major energy efficiency projects were implemented at the Spanish Town Hospital in St. Catherine and the Annotto Bay Hospital in St. Mary during the fiscal year. A state of the art, energy efficient, air conditioning system was installed on the Maternity Wing of the Spanish Town Hospital at a cost of J\$8.4 million. The new system can reduce the hospital's electricity usage by 77,440kWh per annum which should cut the institution's electricity bill by close to \$3.52 million per year. The savings will be a welcomed reprieve for the institution where AC units account for 43% of the energy used.

Similar relief should be experienced by the operators of the Annotto Bay Hospital where PCJ replaced the air conditioning systems serving two operating theatres and the Accident and Emergency (A&E) Department. This implementation, which represents an investment of J\$12 million, should reduce electricity usage by 82947kWh and generate approximately J\$3.82 million in savings.

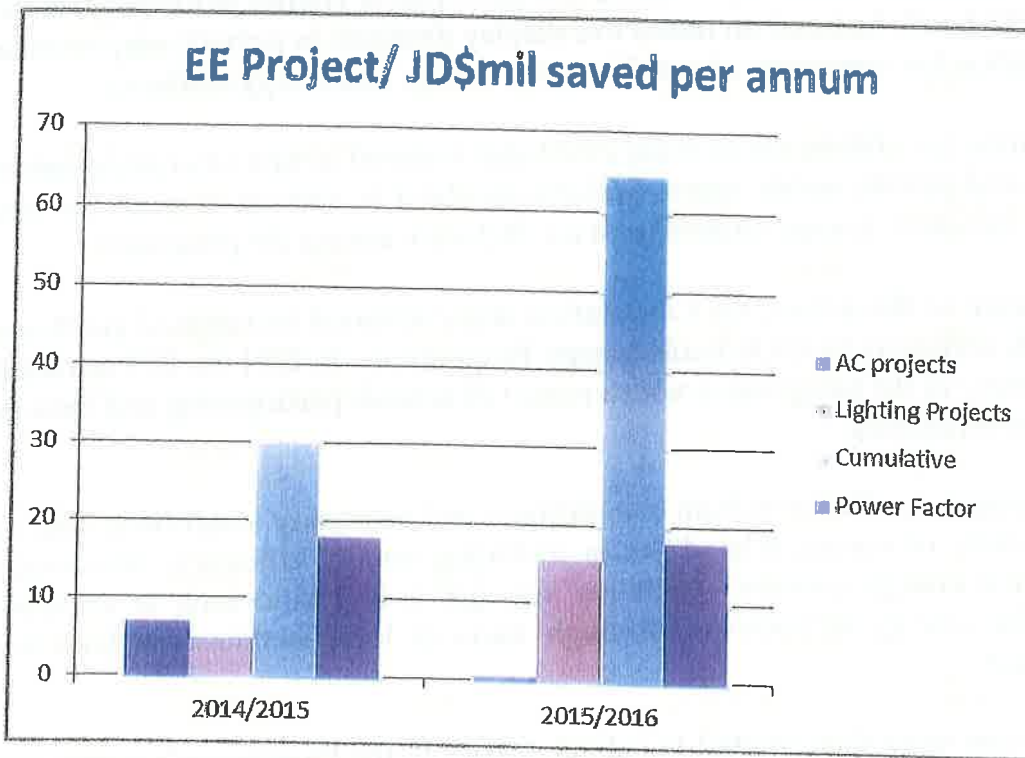
Another government institution which will see savings on its electricity bills as a result of the PCJ's intervention is the National Irrigation Commission (NIC) which faces annual electricity costs of over \$200 million. In 2014 the PCJ installed Variable Frequency Drives at six NIC pumping stations which should reduce electricity consumption by improving power factor. The estimated energy saving is 440kVA per year and the projected savings is approximately J\$18 million per annum.

The PCJ also responded to the Ministry of Education's concern about spiralling energy costs at schools with the implementation of lighting efficiency projects at four secondary institutions. LED lights were installed at Ardenne High School and Norman Manley High School, both in Kingston, the utilisation of which will result in savings of J\$4.9 million per annum. In addition, the procurement process was initiated for similar projects at the Glenmuir High School in Clarendon and the Old Harbour High School in St. Catherine which will be completed in 2015/16.

Overall the interventions carried out by the PCJ in 2014/15 should trim more than J\$30 million off the public sector energy bill. Projects planned for 2015/2016, including



lighting projects in six high schools and AC projects slated for government institutions are expected to have a cumulative effect of J\$64.7 million in savings per year as highlighted in the diagram below.



## 21.0 PUBLIC EDUCATION

The mandate of the PCJ tasks the organisation with public education on energy issues. In the 2014/15 fiscal year we accelerated our efforts to increase public awareness about energy solutions and consumer behaviours which facilitate conservation and promote greater efficiency in energy usage.

During the year we ran a three month multimedia campaign which aimed to increase consumer knowledge about alternative energy solutions. This initiative was in direct response to the growing public interest in renewable energy, particularly solar solutions for domestic use. The campaign focused on providing easy to understand information to enable consumers to make wise decisions regarding investments in solar technology.

In the same vein, the PCJ also carried out extensive public education on energy efficiency to encourage the adoption of behaviours that enable energy conservation. The high point of this campaign was the Christmas season when energy use tends to skyrocket. Throughout the month of December, the PCJ ran consumer advisories in the print and electronic media providing energy saving tips to curtail high usage during the festive season.

The PCJ also continued to target public events such as expositions, seminars and workshops to engage citizens with a view to providing practical advice on affordable

energy consumption. The Corporation served as title sponsors of the 2014 Jamaica Alternative Energy Expo, the largest local energy exposition. More than 60 exhibitors from commercial, financial, academic and government entities participated in the expo. The PCJ's booth featured an interactive display designed to provide easy-to-understand information for consumers about alternative energy and energy efficiency.

In addition to exhibits, the two-day event also featured lectures and presentations from public and private sector representatives involved in various areas of the renewable energy industry. Energy experts from the PCJ were among the presenters.

In addition to the above, the Corporation also continued its targeted youth campaign which is anchored by the Schools Energy Programme. In 2014 the PCJ marked the 10<sup>th</sup> anniversary of the programme with a record 75 schools participating and more than 500 students benefitting.

The youngsters, who were from both primary and secondary institutions, were exposed to a variety of energy-related issues including energy efficiency, conservation and alternative energy sources. Students also got a first-hand look at traditional and renewable energy technologies through tours of local facilities involved in energy generation.

Participants were then invited to submit entries in the Programme's poster, essay and science competitions. The contests challenged the students to proffer solutions to real-life energy issues currently facing the country's decision makers including; the costs versus benefits of renewable energy solutions, the pros and cons of using solar energy and the dilemma of finding affordable and reliable substitutes for petroleum. Cash prizes valued at more than J\$1.8 million were awarded to winners in various categories.

## **22.0 OUTLOOK FOR 2015/16**

Whether setting aggressive renewable energy goals, rigorously promoting energy efficiency or providing an appropriate fiscal framework to attract international investment for the development of energy infrastructure, through the National Energy Policy, the Government of Jamaica has signaled that energy security, efficiency and sustainable energy options are imperative considerations. The PCJ's mandate tasks the organisation with the achievement of most of the goals outlined in the National Energy Policy. Consequently, the Management and Staff of the Organisation are seized with a strong sense of urgency to aggressively develop a suite of affordable energy options to enable national development.

## **23.0 ENERGY SOLUTIONS SERVICES**

Against the background of the absolute demand for large scale national energy interventions in the face of diminishing resources, the Corporation is changing the way it does business. More specifically the organisation will seek to position itself as an integrated energy solutions provider and aggressively pursue commercial opportunities while confining altruism.

To this end, beginning in the 2015/16 fiscal year, the PCJ will limit its non-revenue generating energy efficiency projects to 10% of the overall operating budget. Project selection criteria have been developed and priority will be given to Public Sector Organisations.

Further to this shift, the PCJ will begin to operate as an energy solutions provider offering energy efficiency and renewable energy solutions to clients, mainly in the Public Sector, on a phased basis. Under these arrangements the PCJ will supply the resources to implement energy projects for the client, and the client will repay the PCJ a portion of the cost saving over a period of time to allow PCJ to recover its expenditure and earn a reasonable return.

### 23.1 RENEWABLE ENERGY DEVELOPMENT

In spearheading the effort to diversify the country's energy supply, the PCJ is placing considerable emphasis on the continued development of renewable energy resources. This approach is in support of the direction of the National Energy Policy 2009-2030 which outlines a target of 20% renewables in the energy mix by 2030. To this end the PCJ will be actively seeking to forge partnerships with international players for major project implementation to facilitate renewable energy development.

Efforts to attract investment for hydro energy development will be accelerated with the marketing of the existing data and the undertaking of assessments to ascertain the potential of additional rivers. Pre-Feasibility and Feasibility Studies are proposed for six (6) additional sites, Swift River, Rio Grande I & II, Green River, Wild Cane River and the Rio Cobre Bifurcation Channel. Proposals were received in 2014 and contracts should be awarded in the 2015/2016 fiscal.

Feasibility studies for the development of viable models for biofuels and biomass will also continue in the upcoming fiscal year.

The organisation is also enabling the further development of Jamaica's wind energy potential by contributing to the financing of Wigton III, the Windfarm's latest expansion project. The new 24MW facility is projected to have an output of 63GWh per year which should reduce national oil consumption by more than 37,100 barrels annually and result in yearly savings of approximately J\$400 million on the national energy bill. At the same time, it will provide power for more than 31,500 homes and increase renewable energy input to the national grid by more than 2%.

### 23.2 OIL & GAS

The hazards of Jamaica's dependence on imported fossil fuels do not negate the absolute utility of oil. As a result, a critical element in the PCJ's strategy for diversification is the search for indigenous hydrocarbons. The Corporation will continue its drive to attract investment for local oil and gas exploration which bore fruit in 2014 with the signing of a PSA with Tullow. Following on this, the PCJ is in

discussions with another explorer with a view to securing an additional PSA in the 2015/16 fiscal year.

### 23.3 PETROJAM REFINERY UPGRADE

A critical pillar in the PCJ's strategy for lowering local energy costs is to expand the capacity and capabilities of the Petrojam Refinery. The Corporation is proposing to execute a Refinery Upgrade Project which will significantly improve the existing plant. The project will involve the expansion of the refinery's crude capacity and the addition of enhancements including a Desulphurization Facility to reduce the sulphur content in diesel, a Delayed Coker to produce higher quality products such as gasoline and jet fuel and a Vacuum Tower to produce vacuum gas oil.

If the upgrade is implemented it would mean significant foreign exchange savings for Jamaica as Petrojam would be able to import more crude oil instead of more expensive finished products to supply the Jamaican market. The country would also benefit from the availability of an alternative source of fuel for energy production as Petrojam would now be producing petcoke which can be used locally for power generation.

The upgrade would also impact positively on the economy through job creation as close to 800 persons would be employed during the construction period and 400 permanent positions would be required to operate the expanded facility. Further economic benefits would result from the development of associated industries for by-products from the refinery as well as the demand for input materials.

Given the impact the upgrade could have on the local energy industry and the wider economy, the PCJ will be actively seeking financial partners to implement the Refinery Upgrade Project.

### 24.0 LNG

The JPS and other industry interests are now looking to Liquefied Natural Gas (LNG) as an alternative to heavy fuel oil. In anticipation of changes in the needs of the market, the PCJ will proactively investigate prospects in the LNG market.

A primary consideration will be offsetting any short term losses that may occur as a result of the shift from heavy fuel oils supplied by our wholesale arm, Petrojam. However, the longer term consideration will be deploying a solution, which can provide more affordable energy for productivity and assist in modernizing Jamaica's energy infrastructure. Against this background, the PCJ, working with its retail arm, Petcom and Petrojam will be seeking to engage partners for the implementation of an LNG proposition for the local market.

### 24.1 GROUP TRANSFORMATION

In recent years, the PCJ has indicated its intention to streamline particular areas of operation across its group of companies. A Group Transformation programme which began in 2013/14 will be given considerable priority in the 2015/16 fiscal year.

The initiative will largely focus on the implementation of a shared services model across the Group which will facilitate the consolidation of select operating units, allowing for greater efficiency and more effective cost management.

The Transformation will also focus on instituting more effective corporate governance across the group through greater accountability in reporting arrangements, improved internal control mechanisms and more robust compliance management systems.

**25.0 BUDGETARY PROPOSAL FOR FINANCIAL YEAR 2015/16**

The budgetary proposal for the financial year 2015/2016 is approximately \$910,538,000 and funds will be allocated as follows:

PURPOSE	BUDGETED \$'000
General Administrative Expenses: Inclusive of staffing, taxes, insurance, stationery, maintenance, professional fees, project management, business charges, public relations and community outreach, board expenses and depreciation	667,926
Building Maintenance: Including contracted services, utilities, staffing, maintenance and taxes.	148,077
Other Expenses: Corporate investment/contributions to Energy Fund, contracted services and purchases, research, seminars, feasibility studies, regulatory fees and charges, and promotions.	82,535
<b>TOTAL</b>	<b>900,538</b>



Phillip Paulwell  
Minister

Science, Technology, Energy and Mining  
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MINISTRY PAPER NO: \_\_\_\_\_



**PERFORMANCE OF THE PETROLEUM COMPANY OF JAMAICA LIMITED  
(PETCOM) FOR FINANCIAL YEAR 2014 / 2015 AND PRIORITY FOCUS FOR  
FINANCIAL YEAR 2015 / 2016**

**OVERVIEW OF THE LOCAL MARKET ENVIRONMENT**

The business environment in which the Petroleum Company of Jamaica Limited (PETCOM) operates continues to be as aggressive and competitive as it has been for the past several years.

Whilst this market continues to be dominated by externally owned marketing companies, (TOTAL, RUBIS and GB Group) there has been a rapid expansion of local players over the past year. Trade volumes have declined by approximately 2% over the past year due to the continued contraction in most economic sectors, and this has translated into a more aggressive approach to marketing by the various companies. To the end-consumer of petroleum products, there has been marginal reduction in the price of fuels, but operators in the trade have been compelled to be more innovative in the offerings at their outlets as they seek to ward off the predatory approach of the proliferation of "suitcase marketers" that have emerged in the industry. Regulators will have to be vigilant in ensuring that established operating standards, primarily in the area of Safety, Health and Environment are not compromised.

The business model of PETCOM, wherein 17 of its 24 Retail sites are Dealer-Owned/ Dealer-Operated entities makes the company vulnerable to the practice of cross-buying that has become rampant in the industry and leaves it with very little options to control this activity. These "suitcase marketers" with little or no overheads, are quite prepared to sell to traditional Dealer-Owned Operators who themselves are quite comfortable with challenging the established marketers, whose brand they operate under, to reduce margins even at the expense of reduced maintenance. This approach is not sustainable and will have to be addressed.

Market share has not changed substantially in the past twelve months, with RUBIS still continuing to dominate the market with 31%, followed by TOTAL at 22%, and the GB Group which operates the TEXACO brand at 18%. PETCOM continues to maintain its share of the market at approximately 10%.

**ACHIEVEMENTS FOR BUDGET YEAR 2014/2015**

The budgeted annual sales revenue for 2014/2015 was set at J\$13.6 billion, with gross profit projection budgeted at J\$955.5 million. From this, net profit was targeted to be J\$197.41 million. PETCOM will fall way short of these projections by the end of the financial year as actual sales revenue up to end-January 2015 was J\$8.05 billion with

end-March 2015 sales revenue projected to be approximately J\$9.66 billion. As a consequence, actual gross profit up to end-January 2015 is J\$507.0 million with expected gross profit up to end-March 2015 projected to be approximately J\$608.4 million. Net profit has also been affected by this shortfall in sales revenue as up to end-January 2015 this figure stood at J\$19.1 million with projections to end-March 2015 expected to be approximately J\$22.9 million.

The main contributors to this weak performance against budget are the facts that the total projected volumes to end-January is 20% below the budgeted volumes and is not expected to significantly change up to end-March 2015, the total fall-off of Lubricant sales at 18% of projected volumes due to the increased duties for Lubricants out of Trinidad and Tobago, and loss sales in the LPG market due to frequent breakdown of vehicles and insufficient number of small cylinders to supply the domestic market. Cross-buying by Dealer-Operated sites has not helped with retail volumes affected being reduced by an estimated 30% as a result of this predatory practice.

Despite these setbacks, PETCOM has managed to retain its major customers in the Industrial and LPG bulk sectors. The Retail sector saw a reduction in the number of outlets down from 31 sites to 24 sites. This has primarily been because of several Dealer-Owned Operators choosing to change brands due to better price offerings from competitors, and the perceived fall-out in business opportunities that might be a consequence of the possible divestment of PETCOM. The lucrative Lubricants market can only be resuscitated if a credible blender / supplier of the PETCOM branded lubricants can be identified and suitable contractual arrangements put in place in the shortest possible time.

PETCOM has continued to maintain a positive corporate image by aligning itself with key events with which it has been associated over the past few years through sponsorship. These events include:-

- Major events at Dover race track.
- Lions Club of Mandeville "Men Who Cook" event.
- JAAA, JNA and JFF sponsorship.
- Portland Marlin Tournament.
- Football programmes for Rockfort Corner League and Springfield Development Foundation.
- Port Royal Seafood Festival and Fishing tournament.
- Television special interest talk show "SUSAN SHOW".

Corporate profile is still projected on social media, but the planned re-launch of the corporate website did not materialize and has been rescheduled for 2015/2016.

#### **MEDIUM TO LONG TERM FOCUS**

Return PETCOM to a greater level of profitability:-

- ◉ Remove the current level of uncertainty about the future of PTECOM by making an early decision on the possible divestment of the company.
- ◉ Increase revenue by the opening of retail sites that are currently closed and maximizing on the throughput through the network of Retail and LPG sites.
- ◉ Review existing contractual arrangement with retail dealers to ensure minimum volume targets are agreed per location and routinely assess performance against these targets.
- ◉ Seek to gradually change the business model for the retail sector from Dealer-Owned / Dealer Operated to a Company-Owned (Leased) / Dealer-Operated model by the acquisition of new locations.
- ◉ Review business model for LPG sector with a view to establishing mega-distributors that supports Filling Plants.
- ◉ Reduction in operating expenses by implementing strategic cost containment measures.
- ◉ Consolidate the business relationship with key stakeholders primarily in order to ensure continued loyalty.
- ◉ Conduct profitability assessment of all retail sites and LPG Filling Plants, and make appropriate decisions based upon the results of these assessments.
- ◉ Increase product offerings by establishing more favourable supply options primarily in lubricants, brake fluids and coolants.
- ◉ Maintain strict compliance with industry safety and environmental standards.
- ◉ Continue to be a lobbyist against illegal and predatory practices within the industry.

#### **PERFORMANCE TARGETS FOR 2015 / 2016**

- ◉ Increase total sales volumes by 30% from projected 2015 volumes of 596.5 kbbl to 772 kbbl by:-
  - Re-opening retail sites that are currently closed.
  - Providing resources to LPG sector, primarily in the area of cylinders availability.
  - Improve truck efficiency and reliability.
  - Re-establishing PETCOM as a force to be reckoned with in the Lubricants sector.



- Increase market share from 12% to 13%.
- Increase sales revenue from J\$9.66 billion to J\$12.70 billion and corresponding Gross Profit from J\$608 million to J\$819 million.
- Increase Net Profit Before Tax from J\$22.9 million J\$63.0 million.
- Improve efficiency of LPG deliveries by 50%, either by the acquisition of new LPG vehicles or by sub-letting this section of our operations to a 3<sup>rd</sup> party transporter.
- Contain average receivable days outstanding to 9 days by 2018.
- Implement minimum of 12 Customer Service Training seminars for Retail Dealers / Operators and PETCOM Staff.

PETCOM will continue to operate in a "business-as-usual" mode pending final decision on the divestment issue and will maintain both operating and capital expenditures at responsible levels aimed at protecting its current market share whilst exploring short term business improvements and opportunities.



Phillip Paulwell  
Minister

Science, Technology, Energy and Mining  
April 13, 2015

MINISTRY PAPER NO: \_\_\_\_\_

**PERFORMANCE OF PETROJAM LIMITED FOR FINANCIAL YEAR 2014/2015  
AND FOCUS FOR FINANCIAL YEAR 2015/2016**

**1.0 PURPOSE OF MINISTRY PAPER**

The purpose of this Ministry Paper is to present information on the performance of Petrojam Limited for YTD February FY2014/2015 as well as a summary of the strategic focus, targets and programmes for the financial year 2015/2016.

**2.0 MISSION OF PETROJAM LIMITED**

Petrojam's mission is "to safely refine and supply quality petroleum products to our valued customers at internationally competitive prices, acting at all times in the best interest of Jamaica and all other stakeholders'.

The vision of Petrojam is "to be the best in class Petroleum Company, competitively fuelling Jamaica's sustainable development'

**3.0 ROLES AND FUNCTIONS OF PETROJAM LIMITED**

**3.1 Refinery**

The core business of Petrojam Limited is the operation of a 36,000 barrel per day petroleum refinery located on the Kingston Harbour. Petrojam satisfies the demand for petroleum products through a mix of refining and importation of finished products.

Total sales YTD February fiscal year 2014/15 was 14.15 million barrels compared to target of 15.6 million barrels. This compares favourably with 14.1 million barrels sales performance for the corresponding period in FY 2013/14. Sales to the local (non-bauxite) sector were approximately 11.4 million barrels compared to 11.3 million barrels in previous year.

This performance accounted for an estimated 86% of the total market (non-bauxite) demand for petroleum products with the remaining 14% supplied by the multi-national marketing companies.

**TABLE 1.0: SALES BY MARKET SEGMENT**

<b>SALES BY MARKET SEGMENT YTD FEBRUARY 2015</b>	
<b>MARKET SEGMENT</b>	<b>VOLUME BARRELS (000)</b>
*Transportation	6,142
Energy	5,747
Bauxite	138
Commercial/Manufacturing	878
Bunker	1,248
<b>Total</b>	<b>14,153</b>

*\*includes Jet fuel*

### 3.2 SHIPPING

The Shipping Unit's primary responsibility is to arrange marine transportation of petroleum products into and around the island. This is accomplished through a mix of time and spot-chartered vessels.

### 3.3 BUNKERING OPERATIONS

Petrojam sells bunker fuel (IFO 380 and MGO) to customers engaged in the supply of bunker fuel to ships calling in the Kingston harbour.

Bunker fuel volume sold YTD FY2014/15 was 1.25 million barrels compared to 1.53 million barrels to the same period FY 2013/14. Contribution to total revenue was approximately US\$95.3 million compared to US\$148.3 million in FY 2013/14.

### 4.0 FINANCIAL TARGETS FOR FY 2014/15

TABLE 2: FINANCIAL TARGETS AND PERFORMANCE

CATEGORIES	FY 2014/15	
	Actual (US\$K)	Target (US\$K)
Refinery Gross Margin	51,953	87,749
Other Operating Income	(1,459)	1,383
Admin. & Operating Expenses	(59,566)	(63,433)
Other Operating Expenses	(21,614)	(23,040)
<b>INCOME/ (LOSS) FROM OPERATIONS</b>	<b>(30,687)</b>	<b>2,659</b>
Non-operating Income	1,882	7,696
<b>PROFIT/(LOSS) Before Tax</b>	<b>(28,804)</b>	<b>10,354</b>
Taxation	9,601	(3,451)
<b>NET PROFIT/ (LOSS)</b>	<b>(19,203)</b>	<b>6,903</b>
Sales Volume	14,153 kbbbl	15,622 kbbbl

### 5.0 CORPORATE PERFORMANCE HIGHLIGHTS FOR 2013/14

This section provides highlights of Petrojam financial and operational performance for YTD February fiscal year 2014/15

#### FINANCIAL PERFORMANCE

##### Profit/Loss Before Tax

Fiscal YTD February 2014/15 Petrojam posted pre-tax losses of US\$28.8million compared to targeted profit of US\$10.4 million. Continued growth in U.S. shale gas production and an increase in non-Organisation of Petroleum Exporting Countries (OPEC) oil exports have led to a supply glut which exerted a downward pressure on prices. OPEC's failure in November to reach agreement on production curbs exacerbated the situation and sent prices tumbling. Between August and January prices fell from above US\$100/bbl to under \$50/bbl. The combined effects led to weak and sometimes negative refinery margins. The main drivers of the losses are as follows:

### 1. Price Movement

Petrojam follows international industry norms in setting ex-refinery prices. Prices to the Jamaican market are adjusted with a one-week lag. It takes approximately two to three weeks for the product from the point of receipt to the point at which it is sold in the market. Therefore, in a rapidly declining market Petrojam experiences negative margins, as the purchase price is always above the selling price.

### 2. Inventory Valuation

Inventory is valued at the end of each month based on the latest market prices. With the rapid decline in prices, Petrojam experienced inventory valuation losses on a month to month basis. This contributed US\$50.8M to the year to date losses.

### 3. FX Losses

Under International Accounting Standard (IAS) 21, Petrojam reports its financial results in US dollar. Notwithstanding that the cost of acquiring foreign currency to settle USD denominated liabilities for oil imports is a real cost. FX losses YTD February was US\$5.6M

### 4. Gross Margin

Gross margin for the reporting period was US\$52 M which is US\$35.8 million below the targeted US\$87.7 million. Strong refinery margins were experienced in the first quarter of the year as prices trended upwards. However, refinery margins fell off during August as prices started to decline. Petrojam experienced negative margins November 2014 to January 2015. Prices rebounded in February and held strong to the end of the month. Refinery margin for the month of February was US\$13.1M.

### 5. Expenses

Total operating expenses for the fiscal year was better than the budgeted US\$81.2 million compared to target of US\$86.4 million. Actual YTD operating and administrative expense was US\$59.6 million bettering the US\$63.4 million budgeted.

## SUMMARY OF OPERATING PERFORMANCE

### Plant Operations

Generally, operating performance for FY 2014/15 declined when compared to the previous fiscal year. Service factor and capacity utilization are the two key measures of plant operations often looked at.

#### 1. Refinery Service Factor

Service factor for the FY was 77.5% compared to a target of 90.4%. The low service factor was as a result of 82 days downtime. The refinery was shut down for seventy one day (August to Oct 12) to carry out major maintenance (turnaround). Three other unplanned shutdowns took place to effect repairs to leaking vessels and equipment.

## 2. Capacity Utilization

Capacity utilization for FY2014/15 was 57% achieved from a crude charge of 18 kb/d vs. a targeted thru put of 23 kb/d. Capacity utilization was primarily impacted by the low service factor.

## 6.0 PERFORMANCE FROM THE BALANCED SCORECARD PERSPECTIVES

Petrojam uses the Balanced Scorecard (BSC) strategic planning and management system to enable execution and monitoring of the company's progress in implementing its strategic plan.

### PERFORMANCE SCORECARD

OBJECTIVE	MEASURE	CURRENT PERFORMANCE	TARGET 2014/15	GAP	COMMENTS
Achieve minimum throughput of 28,000 bbl/day	Gross margin	US\$3.67/b	US\$5.61	-US\$1.94	
	Operating Expenses	US\$4.21/b	US\$3.99	-US\$0.22	
	Current Ratio	1.03	1	0	
	ROCE (%)	-26.18	13.18	-39.36	
	Receivables past due %	28	5		

The main initiatives to improve financial performance of the refinery are:

- **Upgrade the Refinery:** the refinery upgrade project is the long term solution to increase the profitability of the company. During the year discussions were held with some potential investors. Unsolicited proposals were submitted for undertaking the upgrade project. All other project activities are on hold until financing arrangements concretized.
- **Optimize Refinery Operations:** these projects are aimed at progressively increasing throughput by reducing/eliminating bottlenecks in the process which limits throughput. During the shutdown the Catalyst in the reforming unit was replaced with UOP's R-500; a break through catalyst which exhibits the highest yield, activity and stability available. The new catalyst should result in improved refinery economics.

Maintain Retail sector market share	LPG Market share	70%	73%	3%	Increased competition from Multinational Companies in western Jamaica has resulted in a reduction of
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OBJECTIVE	MEASURE	CURRENT PERFORMANCE	TARGET 2014/15	GAP	COMMENTS
					LPG sales
Increase annual sales of Ultra Low Sulphur Diesel (ULSD)	ULSD Sales	236,000	183,000		
Achieve interim environmental KPIs and standards by 2015	Environmental Index	70%	75	0	Six of the nine waste water parameters monitored by NEPA were higher than the NEPA limit.
Improve overall risk and quality Management by achieving international accreditation by Q3 2015	Insurance rating - good	Fair	Good		Risk assessment by Zurich in November 2014, graded the company on property damages as fair
<ul style="list-style-type: none"> <li>Waste water treatment plant - Behind schedule. Detailed design phase was extended due to extensive iterations between Petrojam and consultant. Revised date for completion is Q3 2015/16</li> <li>Enterprise Risk Management Program - ERM Policy approved by the BOD. Risk Management Committee established. Risk Framework and protocol being developed</li> </ul>					
Increase	Employee satisfaction	54	75		
	Staff Turnover	3	2		
<ul style="list-style-type: none"> <li>Implement Talent Management Software - Core HR and Performance management modules of the software were rolled out and currently being used by employees</li> </ul>					

## 7.0 MAJOR SUSTAINING CAPITAL PROJECTS

Petrojam's capital budget for fiscal year 2014/2015 was US\$21.2 million; actual expenditure for the period was US\$14.3 million or approximately 67% of the budget. Major projects and expenditure to date are listed below:

PROJECT	US\$ EXPENSES FY 2014/2015
Tank Repairs	2.5M

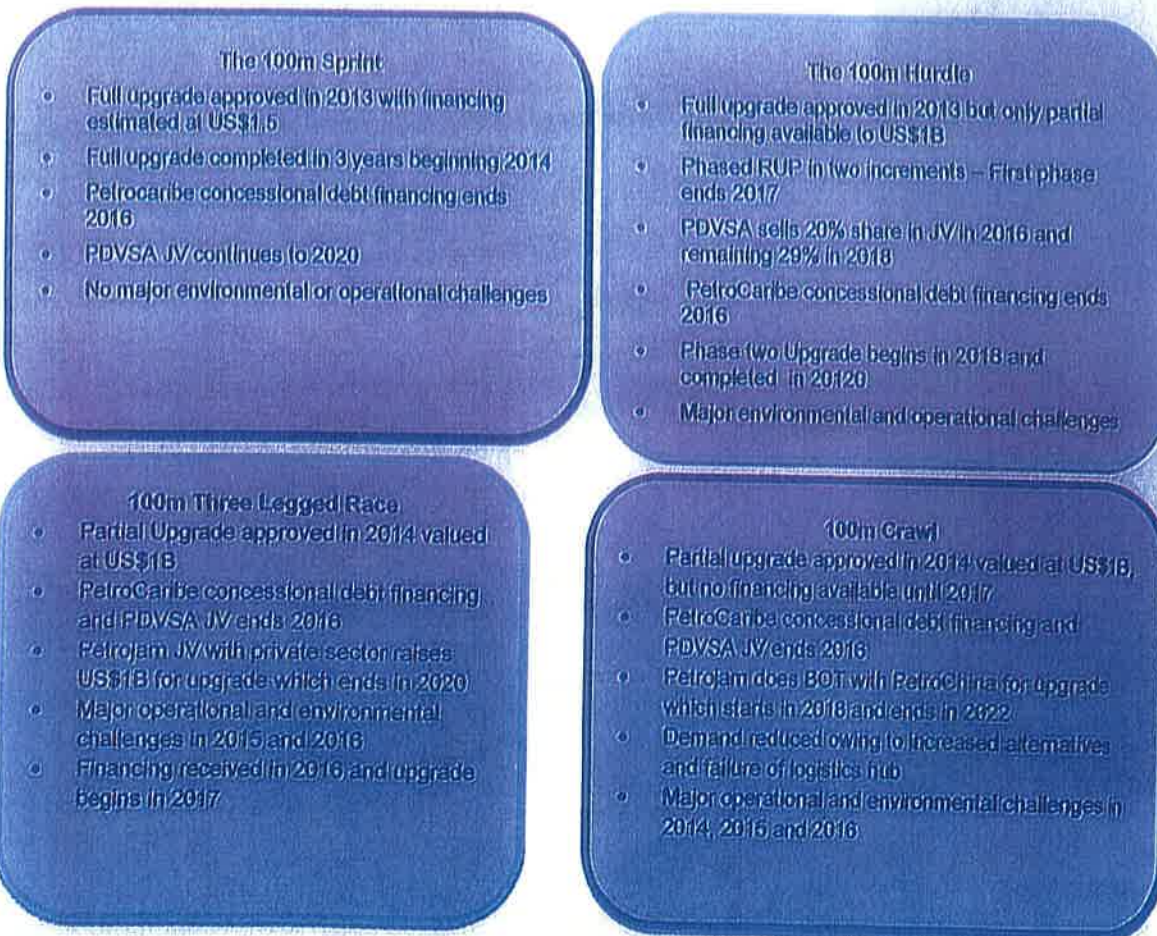
Main Dock Restoration -	2.6M
Fabrication of T-2	406K
Replacement of E-4	1.5MK
Construction of Wastewater Treatment Plant	2.3M

## 8.0 STRATEGIC OUTLOOK FOR 2015/2016- 2019/2020

From a global perspective crude price volatility continues to be a major factor that should be expected to persist as the market seeks to balance supply, demand and prices.

Petroleum prices are being influenced by the continued surge in North American shale oil production creating a supply glut; and forcing prices downwards. For the last several years, Petrojam has operated in a challenging environment underscored by significant volatility in the price of petroleum products; as well as a fall in the demand for petroleum products and other financial challenges due to the tightening of local economy.

Petrojam employed the scenario planning methodology to review the impact of probable issues in the external environment on the organisation in order to develop a plan which would be responsive to the changing operating environment. The scenarios included an analysis of current trends and their likely trajectory into the future.



The corporate plan for 2015/2016 through 2019/2020 was adjusted to respond to the 100m Crawl scenario, Petrojam will therefore seek to position the organization for long term survival and competitiveness by focusing on the strategic themes and their associated objectives and initiatives shown in the following table

### STRATEGIC OBJECTIVES AND INITIATIVES

Over the next five (5) years the company will focus on the following strategic objectives and associated initiatives

<i>Reduce operating expenses and optimize gross margins</i>	<ul style="list-style-type: none"> <li>a) Execute project to secure alternative source of power</li> <li>b) Install jockey pump to firewater system</li> <li>c) Repair main dock and upgrade EKT</li> <li>d) Progress the refinery upgrade project</li> </ul>
<i>Maintain sales volume</i>	<ul style="list-style-type: none"> <li>a) Initiative to supply LPG to JPS Bogue</li> <li>b) Develop facilities to export asphalt</li> <li>c) Establish alternative facilities to supply ULSD</li> </ul>
<i>Achieve crude throughput of 28kb/day</i>	<ul style="list-style-type: none"> <li>a) Implement projects to address bad actors</li> <li>b) Restricting 28kb/day throughput (pumps, compressors, boilers, exchangers)</li> <li>c) Replace the de-ethanizer tower (T-2)</li> </ul>
<i>Achieve interim environmental KPI's and standards by 2015.</i>	Complete Phase 1 of the Wastewater Treatment Plant
<i>Reduce loss of primary containment</i>	<ul style="list-style-type: none"> <li>a) Execute tank repair program</li> <li>b) Update cathodic protection</li> <li>c) Procure portable firewater pump</li> <li>d) Install CCTV (phased)</li> <li>e) Install fire detection and protection system</li> </ul>
<i>Achieve 75% employee engagement</i>	<ul style="list-style-type: none"> <li>a) Build strategic technical competencies</li> <li>b) Address issues from employee engagement survey</li> <li>c) Construct new laboratory</li> <li>d) Install Refinery lighting</li> <li>e) Renovate corporate offices</li> </ul>

#### 9.0 CAPITAL PROJECTS FOR 2015/16

Approximately US\$20 million is expected to be spent in 2015/16. Approximately US\$13.3 million will be spent on sustaining capital activities such as the plant maintenance program, refurbishing of storage tanks, safety systems and replacement of fixed assets. The other US\$6.7



million is planned to be spent on CCTV system, a new product testing laboratory, restoration of the main dock as well as on the waste water treatment plant.

PROJECT TITLE	DESCRIPTION	COST (US\$K)
Major Maintenance - Storage Tanks 1, 12, 112	Execute repairs to several storage tanks	450
Tanks 118, 102, 107, 109, 110, 200	Repair tank structure and rehabilitate associated equipment.	4,529
Tank 201 and 203 Repairs	Demolition of Tk-203 and construction of a 30ftX d48ft tank.	800
Cathodic Protection	Install Cathodic Protection system elements for storage tanks, pipeline and steel structures.	600
Tank Master and RTG	Installation of system to facilitate full use of radar gauges.	400
Asphalt Export Facilities	Increasing the capacity of the asphalt dry dock to facilitate export of larger cargoes.	665
LPG Supply to JPS Bogue	Installation of facilities to supply LPG to JPS Bogue	500
LPG Loading Rack Upgrade	Modification to the LPG Rack to increase loading capacity	250
C-1A Motor Replacement	Replace unreliable and obsolete motor to increase refinery service factor	140
T-2 De-Ethanizer Tower Replacement	Replace the existing De-ethanizer tower	693
Lightning Protection System	Design and implement system upgrade for Lightning Protection to industry standards.	286
Electrical Power Facility	Installation of additional electrical power distribution facilities	1,350
Refinery Lighting Upgrade	Improvement of the General Area and Perimeter lighting systems	340
New Laboratory	Construction of a new laboratory to satisfy international industrial hygiene standards.	1,500
Secondary Effluent (Wastewater) Treatment Project	Design, procure and install a Wastewater Treatment plant to comply NEPA regulations.	2,200
Fire Detection & Protection	Installation of fire fighting equipment on the loading bays in Kingston and Mobay.	400
CCTV System	Install CCTV system at KILR to improve the level of security	200

## 10.0 MAIN PERFORMANCE TARGETS FOR FINANCIAL YEAR 2015/2016

### OUTLOOK

Under current economic assumptions, and with no major supply disruptions foreseen, the expectation is that petroleum prices will trend upwards in 2015/16 which will create the environment for a return of positive margins in the refinery business. The country continues to

experience anaemic growth which is expected to moderate demand in an environment of lower fuel prices.

In fiscal year 2015/16 with the expected return to market norms, albeit at lower prices, Petrojam is projecting to make a net profit of US\$22.1 Million

BALANCED SCORECARD PERSPECTIVE	PERFORMANCE MEASURE	TARGET 2015/16
Financial	Gross Margin US\$/B	6.31
	Operating Expenses US\$/b	3.92
Customer	Sales Volume (Million barrels)	16.2
Internal Processes	*Capacity Utilization %	88
	Safety Index (min)	100
	Environmental Compliance %	75
Learning & Growth	Employee Engagement %	75

#### 11.0 BUDGET FOR 2014/15 AND 2015/16

The following table shows the budget, revised forecast for fiscal year 2014/15 and the budget for financial year 2015/16.

#### BUDGET FOR FINANCIAL YEARS 2014/15 & 2015/16

ITEMS	BUDGET 2014/15 US\$000	FORECAST TO END 2014/15 US\$000	BUDGET 2015/16 US\$000
Refinery Gross Margin	101,874	65,220	111,731
Other Operating Income	(1,503)	(1,255)	(3,195)
Admin and Operating Expenses	(68,742)	(63,681)	(63,518)
Other Operating Expenses	(25,343)	(21,845)	20,792)
<b>INCOME FROM OPERATIONS</b>	<b>9,307</b>	<b>6,035</b>	<b>24,227</b>
Non-operating Income / (Expense)	8,403	12,385	5,202
PROFIT/(LOSS) Before Tax	17,711	(20,628)	29,429
Taxation	(5,904)	6,876	(7,357)
<b>NET PROFIT/(LOSS)</b>	<b>11,807</b>	<b>(13,752)</b>	<b>22,072</b>
Sales Volume	17,231 kb	15,199 kb	16,230kb



Phillip Paulwell  
Minister

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MINISTRY PAPER NO: \_\_\_\_\_

**PERFORMANCE OF PETROJAM ETHANOL LIMITED FOR FINANCIAL YEAR  
2014/2015 AND PRIORITY FOCUS FOR FINANCIAL YEAR 2015/2016**

**1.0 PURPOSE OF MINISTRY PAPER**

This Ministry Paper is intended to inform Parliament and the public on the performance of Petrojam Ethanol Limited during the 2014/2015 Financial Year and its focus for the 2015/2016 Financial Year.

**2.0 MISSION**

To utilize the opportunities created by and available to Petrojam Ethanol Limited ("PEL"), for the production, exportation and sale of ethanol to maximize profit margins in the interest of all stakeholders.

PEL will conduct its affairs in a manner beneficial to Jamaica at all times. The Company will act with integrity and will strive for excellence in all its operations.

**3.0 BACKGROUND/OVERVIEW**

Petrojam Ethanol Limited (PEL) owns a 40,000,000 gallon ethanol dehydration plant with associated storage that is located at the Petrojam Refinery, 96 Marcus Garvey Drive, Kingston. PEL is a subsidiary of the Petroleum Corporation of Jamaica (PCJ). The Board of Directors has the responsibility for the governance of PEL. The operation of PEL is typically manned by 12 permanent employees and additional resources provided by Petrojam Limited refinery through shared services arrangements.

PEL qualified under the Caribbean Basin Economic Recovery Act (CBERA) of 1983, for the exemption of duty to export fuel grade ethanol into the USA from countries of the Caribbean Basin (Caribbean & Central American region). To take advantage of CBERA, in 1986 Petrojam Ethanol Limited (PEL) installed a 40 million US gallons ethanol plant but due to inefficiencies in the technology at the time; the plant was mothballed in 1997. During the inactive period, PEL maintained its stake in the ethanol business through a toll processing arrangement with other ethanol dehydration plants in Jamaica.

In 2004 PEL established a partnership to secure the competitively priced hydrous alcohol (feedstock) and to invest in the rehabilitation of the old ethanol plant. The fact that Jamaica was part of the Caribbean Basin Economic Recovery Act (CBERA) and Brazil had vast experience in the manufacture/supply of ethanol and product research, these were the advantages being capitalized on by the parties for the production and sale of fuel grade ethanol as an octane enhancer in gasoline. The following were the main benefits of the partnership which concluded in November 2008:

- Rehabilitation and modernization of the dehydration plant;
- Developed expertise in ethanol feedstock sourcing and procurement;
- Establishment of new and developing markets for fuel grade ethanol; and

- Full ownership of the dehydration facilities since January 2009.

The partnership was terminated by the Government in 2008 to facilitate the introduction of the dehydration plant into the negotiations for the privatisation of the Government-owned sugar assets, resulting in significant cost to PEL. The arrangement was not successful and unfortunately PEL has not managed to secure any arrangement with similar benefits since that time.

During the third quarter of 2009, there was a deficit in the demand for sugar on the world market resulting in significant increases in the sugar and ethanol prices from Brazil. This was initially due to adverse weather conditions in Brazil throughout the sugar-cane harvesting period and secondly the fallout of supplies from India due to the infestation of the sugarcane crop. During that time, PEL and the other CBI producing countries were not able to operate economically because of the price differential in the supply market versus the selling market. The price differential remained unfavourable for CBI producers to date. As a result, the PEL dehydration plant was shut down for three (3) years from December 2009 to December 2012. As a result, the operation was focused on supplying anhydrous ethanol for local gasoline blending from imports.

Nevertheless, some short term production activities were possible for CBI producers due to favourable benefits attributed to Advanced Biofuels based on the RFS2 program. Under this arrangement, end product buyers receive renewable index (RIN) credits for all sugarcane-based ethanol blended into gasoline in the USA. Where the credit is sufficient to off-set the negative margins derived from the market prices, CBI production becomes economical for suppliers, primarily Brazilian sugar & ethanol producers or traders. Resulting from this scheme, PEL managed to realize some dehydration activities between December 2012 and August 2013. Since then the market situation has been unfavourable with only a limited window of opportunity that is normally short-lived and doesn't provide sufficient time to realize any significant benefit. Going forward, efforts are being made to hedge the supplies of hydrous ethanol against moving anhydrous price for fixed margins when plant operation resumes.

#### 4.0 THE GLOBAL ENVIRONMENT

Bio-fuels, including ethanol and bio-diesel, will be an increasingly important source of unconventional liquids supply, projected to reach 5.9 million barrels per day in 2030. Particularly strong growth in bio-fuels consumption is projected for the United States, where production of bio-fuels is projected to increase from 4 billion gallons per year in 2006 to 36 billion gallons in 2022, supported by legislation in the Renewable Fuels Standard (RFS2) that mandates increased use of bio-fuels with cellulosic ethanol to contribute 16 billion gallons of the target.

Environmental security concerns in other regions are giving birth to new government targets and incentives, aimed at reducing petroleum imports and increasing the consumption and production of renewable fuels. Europe, Brazil, China and India each aim to replace 5% to 20% of on-road gasoline consumption with ethanol. These global

demands are also driving new investment into cellulosic ethanol Research & Development and maturation. Fifteen years ago, there were only a handful of countries producing ethanol. The largest was Brazil, where ethanol is produced from molasses and sugar cane juice. In recent years the US has surpassed Brazil as the leading producer of ethanol. The US produces mostly corn alcohol.

#### 4.1 Caribbean & Central American Region (CBI)

The operating margin for the traditional hydrous supply from Brazil for dehydration and export to the USA still does not exist. For this reason there have been no production activities in the region for well over a year. Prospects for short term processing may exist at the start of the new sugar cane crop in Brazil but the margins for the CBI producers will not be viable for periods less than 6-9 months.

#### 4.2 Jamaica's Biofuels Progress

The production of ethanol feedstock by the Jamaica sugar sector is the perfect chance for PEL to resume ethanol dehydration. This is opportune for the country's energy security as it supports renewable energy development and decreases the dependency on imported fossil fuels. Because ethanol production requires substantial process energy inputs (electricity and steam), it must be facilitated by sugar factories with a certain degree of flexibility, producing both integrated energy and finished materials.

The sugar industry is a vital sector to the Jamaican economy as it provides foreign exchange and employment. However, the potential of the industry is untapped. The sugar sector must be harnessed to contribute to the country's long term energy objective. Some analytical work and studies have already been done and are available. With adjustments for current situation and recent developments in the local and international markets, the potential for ethanol production by the local sugar cane sector can be realized.

Based on recent research, the prospects for a Jamaican biofuels industry are listed below:

- With 47,000 hectares of suitable land available for sugar cane, Jamaica has the capability to produce all the sugar and molasses the nation needs for its domestic consumption and rum production plus enough ethanol for 10 per cent blending in gasoline (E10) throughout the island. Increasing yields per hectare could expand production significantly above this level, as well as reducing cost.
- Ethanol production from cane can be cost-effective but will require year-round operation for efficient utilization of the distillery and a

market for surplus energy in the form of reliable electric power. All-season operation will require economically increasing available feedstock to the distillery and providing supplemental fuel for the cogeneration power plant.

- Various ways to increase distillery feedstock should be considered, including: extending the cane harvesting season by introducing varieties of sugar cane or perhaps sweet sorghum that are suited to early/late harvesting, using partially processed and stored cassava, and storing concentrated whole sugarcane juice and/or molasses,
- In order to encourage the development of existing and new feedstock for ethanol production, PEL will be encouraging further research and development work among under-graduates and post-graduates of the Universities in Jamaica. This will be in form of a competition focusing on renewable energy.

The findings from past research point to a future for a viable biofuels industry in Jamaica led by the sugarcane industry. The production of hydrous ethanol feedstock for dehydration to fuel grade ethanol by local distilleries is reported as a viable proposition and should be further explored and developed. It's also reported that enough ethanol can be produced locally to meet the entire blending needs of the E-10 program in Jamaica while simultaneously satisfying the requirements for sugar, molasses, rums and liqueurs. There are certain conditions that will have to be met which typically represent a departure from existing norms and local culture. Year round operation of sugar factories for example, is not currently practiced and the feasibility of doing that will have to be developed.

PEL have recently initiated discussions with the stakeholders of Pan Caribbean Sugar Limited (PCSL) for a local ethanol production project. For the project to be economically feasible for PEL and the stakeholders in the Sugar Industry the production cost must be minimized and the capacity maximized in a sustainable manner. It is important that the final cost to produce fuel ethanol will be less than or equal to the landed price of fuel ethanol from the US market.

As stated in the past research work, the primary factors which will guarantee a feasible production cost are (i) cogeneration, (ii) year-long production, and (iii) improvement in rootstock (high-yielding varieties).

According to various studies, the objective to be worked out with the Sugar Industry will involve:

- ◆ Expansion & Diversification of Product Base;
- ◆ Joint ventures for potable alcohol and fuel ethanol;
- ◆ Increased yields and reduced production costs;
- ◆ Creating a vertically integrated industry; and

- ◆ Plans for remainder of Industry not as clearly developed.

The weaknesses cited are:

- ◆ Agriculture fields and infrastructure cannot easily take advantage of new technology; and
- ◆ Industry dependent on labour-intensive practices at labour costs is out of synch with low value commodity.

Modernized model to be adopted by the Industry includes:

- ◆ Integrated Low Cost Industry;
- ◆ Co-Generation;
- ◆ High Quality Sugar;
- ◆ 95% Alcohol; and
- ◆ Flexibility to inter-change product.

## 5.0 ROLE AND FUNCTIONS

Cabinet mandated the Petroleum Corporation of Jamaica in 2002 to ensure the accelerated implementation of the Jamaica Energy Sector Policy. PEL is a processor of fuel grade anhydrous ethanol (dehydration of hydrous ethanol) and qualifies under the Caribbean Basin Economy Recovery Act 1983 for the exemption of duty in the exportation of fuel grade ethanol in the U.S.A. Under existing legislation there is an available quota of approximately 850 million US gallons annually to those countries qualifying. The market has grown significantly in the USA since the passing of the Renewable Fuels Standard (RFS) in 2007 and more recently the RFS2 in 2010. PEL seeks to further developments in the renewable energy sector and as such has embarked upon the following objectives:

- ⊗ To source feedstock (hydrous ethanol) from international suppliers and from local suppliers when available;
- ⊗ To maximize its processing capacity for the dehydration of hydrous ethanol into anhydrous ethanol; and
- ⊗ The marketing and sale of fuel ethanol locally, to the United States and other markets available to the company.

## 6.0 PRIORITY TARGETS/OBJECTIVES AND BUDGETARY ALLOCATION FOR FINANCIAL YEAR 2014/2015

To continue the business of ethanol production and trading using the storage and pumping facilities of the dehydration plant which is fully owned by Petrojam Ethanol Limited (PEL) a subsidiary of The Petroleum Corporation of Jamaica (PCJ).

Based on current market outlook, the dehydration plant was projected to resume production activities by June 2014 under toll processing arrangement(s). The plant was estimated to operate for 100 days during the FY2014/15 and 167 and 250 days for the

subsequent FY2015/16 and FY2017/18 respectively. During the periods of non-production the plant will be properly laid-up in preparation for processing at short notice. In addition, necessary equipment maintenance will be planned and executed. The human resources for the period would come primarily from the existing 13 employment posts of which a maximum of eight (8) will be assigned to production operations. Additional resources will come from Petrojam Limited primarily in the areas of utility supplies, maintenance services, shipping logistics, laboratory services and safety & environment. Resources in the areas of accounting services, human resources administration/development, Information Systems and other technical support would continue to be provided by Petrojam Limited with possibilities for transitioning to PCJ during the period. Shared Services agreements are in place with Petrojam to allocate and offset the cost of these services appropriately.

Based on the production days projected an output of 12 million US gallons of finished product was estimated for FY2014/15 and 20 million US gallons projected for FY2015/16 and 36 million gallons for FY2015/16. This was based on the projection for feedstock supply from Brazil or other sources to meet these targets. A minimum performance target of 95% percent of nominal capacity is projected with a service factor of 30% for FY2014/15 and increasing to 50% and 75% service factors for FY2015/16 and FY2016/17, respectively.

The projection was for the receipt of four (4) cargoes of approximately 3.0 million gallons of hydrous ethanol between June and August 2014. Exports of approximately 6.2 million gallons in three (3) parcels projected for July to August 2014. In addition, approximately 10.0 million gallons of anhydrous ethanol would be sourced for delivery in four (4) cargoes in May, November, December of 2014, and February 2015.

Ethanol is transferred to Kingston Industry Loading Rack by pumps via pipelines and smaller intermediate storage tanks. Petrojam Mo-Bay terminal and external customers receive ethanol from the main anhydrous ethanol storage tanks via pipeline to an ocean-going vessel berthed at one of the two ship docks operated by Petrojam.

All local sales will be considered as imports into the country by the buyer as PEL's operation is classified in a free-zone.

## 6.1 MATTERS OF PRIORITY

**TABLE 1: MAIN PRIORITIES DURING THE FISCAL YEAR**

PRIORITIES	GOALS	STRATEGIES	BENEFIT
Growth & Development	Strengthen Business Opportunities	<ol style="list-style-type: none"> <li>1. Strengthen relationships with key stakeholders in the global ethanol industry to benefit from new opportunities for the resumption of plant operation and for the uninterrupted supply of anhydrous ethanol for E-10.</li> <li>2. Identify suitable local entity with vested</li> </ol>	<ul style="list-style-type: none"> <li>• Fuel Security aligned with National Energy Policy</li> <li>• Viable Production</li> <li>• Competitiveness</li> </ul>



PRIORITIES	GOALS	STRATEGIES	BENEFIT
		<p>interest in the sugar industry and establish mutual arrangement for the development and production of hydrous ethanol in the short term as feedstock for the dehydration.</p> <ol style="list-style-type: none"> <li>3. Maintain existing bi-lateral arrangements for the continuation of all benefits from ethanol trading.</li> <li>4. Develop new market for the sale of fuel-grade ethanol</li> </ol>	ess
Operations	<ul style="list-style-type: none"> <li>▪ Production</li> <li>▪ Reliability of Ethanol Supply</li> <li>▪ Quality Assurance</li> <li>▪ Operation Efficiency</li> <li>▪ Financial Viability</li> </ul>	<p>Seek to resume production activities on a consistent basis within two (2) years.</p> <ol style="list-style-type: none"> <li>1. To continue the supply of Anhydrous Ethanol to the local petroleum market for E-10 gasoline blending based on available infrastructure and logistics arrangements</li> <li>2. Seek to identify reliable source of Anhydrous Ethanol supplies at more competitive prices on a medium to long term basis.</li> </ol> <p>Maintain the high product quality standard and enhance the quality control mechanisms as necessary.</p> <ol style="list-style-type: none"> <li>1. Strengthen the Procurement and Supply process</li> <li>2. Improve plant equipment efficiency</li> <li>3. Enhance the reliability of utility services</li> </ol> <ol style="list-style-type: none"> <li>1. Boost Revenue - <i>Improve on receivables and optimize interest income.</i></li> <li>2. Curtail Operating Expenses - <i>Manage demurrage cost, implement energy conservation systems and control staff cost</i></li> </ol>	<ul style="list-style-type: none"> <li>• Fuel Security aligned with National Energy Policy</li> <li>• Job Creation, Efficiency and Competitiveness</li> </ul>
Strategic Positioning	<ul style="list-style-type: none"> <li>▪ Operations Effectiveness &amp; Efficiency</li> <li>Plant Re-location Options</li> </ul>	<ol style="list-style-type: none"> <li>1. Negotiate and improve services provided by Petrojam Refinery as necessary</li> <li>2. Collaborate with parent company, PCJ, for the Integration of selected services for more efficiency</li> </ol> <p>To facilitate Petrojam Refinery Upgrade, the following may be necessary:</p> <ul style="list-style-type: none"> <li>▪ Identification of alternative locations</li> <li>▪ Assess cost of relocation based on the options available</li> </ul>	

PRIORITIES	GOALS	STRATEGIES	BENEFIT
Human Capital Development	Staff Enrichment	1. Effective Performance Management System 2. Effective Communication	Highly Motivated workforce Job Satisfaction

## 6.2 Budgetary Proposal for Financial Year 2014/2015

The budgetary proposal for fiscal year 2014/2015 is outlined in Table 2.

**TABLE 2: BUDGETARY PROPOSAL FOR FISCAL YEAR 2014-2015**

	2014/2015 TARGETS
<b>Financial</b>	-
Sales Revenue & Other Operating Income	J\$5,395,363,618
Gross Margin	J\$262,701,134
Profit (before tax)	J\$122,782,907
Expenses ( <i>operating, administrative, other etc.</i> )	J\$162,907,083
<b>Operation</b>	-
Anhydrous Production (USG)	12,000,000
Feedstock Imported (USG)	12,600,000
No. Days Operations	100
Daily Production (USG/day)	120,000
Service Factor (%)	30%
Losses (%)	0.5%
<b>Sales &amp; Marketing</b>	
Local E10 Sales (USG)	16,825,200
Export Sales (USG)	6,200,000
<b>Personnel</b>	
Employees	6 full time + 5 part time
Training (no. of hours/person)	40
Accidents	0

## 7.0 PERFORMANCE/ACHIEVEMENT - FINANCIAL YEAR 2014/2015

7.1 TABLE 3 OUTLINES THE OBJECTIVES FOR FINANCIAL YEAR 2014/2015.

**TABLE 3: PERFORMANCE OBJECTIVES FOR 2014-2015**

1. Resumption of Production on a short to medium term basis	<ul style="list-style-type: none"> <li>▫ Target suppliers, preferably face to face</li> <li>▫ Establish new Toll Processing Contract (1 year preferably)</li> <li>▫ Continuous Market analysis and consultation</li> <li>▫ Strategic alliances with local sugar companies</li> </ul>
2. Continue to build relationships with key stakeholders in the ethanol industry	<ul style="list-style-type: none"> <li>▫ Conferences/meetings for market update and networking</li> <li>▫ Subscriptions for timely update on market</li> <li>▫ Integration with local sugar-cane &amp; ethanol industries</li> <li>▫ Other potential suppliers</li> </ul>
3. Strengthen the framework on which the CBI ethanol industry strives.	<ul style="list-style-type: none"> <li>▫ Seek support from lobbyist and other key players in the CBI ethanol producers</li> <li>▫ Develop synergies with local and regional ethanol producers</li> </ul>
4. Maintain benefits attributable to the survival of the ethanol dehydration business. (Bilateral, tariffs, duty etc.) Anhydrous ethanol procurement and supply reliability for E-10 gasoline blending	<ul style="list-style-type: none"> <li>▫ Collaborations with relevant GOJ agencies and other CBI ethanol producing nations</li> <li>▫ Optimize Free Zone benefits.</li> <li>▫ Lowest cost supplies (production or trading)</li> <li>▫ Re-order basis of 30-45 days order cycle.</li> <li>▫ Target order quantity of 2.0 – 2.5M US gallons</li> <li>▫ Maintain or improve reasonable payment terms with suppliers</li> <li>▫ Re-negotiate selling prices with buyers as necessary.</li> </ul>
5. Maintain high product quality standards	<ul style="list-style-type: none"> <li>▫ Compliance with applicable standards (ASTM, ANP etc.)</li> <li>▫ Retention and logging of samples as per industry standard</li> </ul>
6. Strive for the higher efficiency in operation	<ul style="list-style-type: none"> <li>▫ Productivity improvements (e.g. Installation of re-boiler for steam recovery)</li> <li>▫ Improvement in logistics co-ordination</li> <li>▫ Strengthen relationship with the Jamaica Customs and Custom Brokers</li> </ul>
7. Export and Sales Reliability	<ul style="list-style-type: none"> <li>▫ Monitor and improve efficiency in the transfer of product as necessary.</li> <li>▫ Continually seek to reduce utility cost (e.g. electricity, water, steam)</li> <li>▫ Minimize product losses</li> </ul>
8. Increased Revenues	<ul style="list-style-type: none"> <li>▫ Timely issuance/receipt of Inspection report</li> <li>▫ Prompt submission of documentations from the various agencies</li> </ul>
9. Curtail Working Capital	<ul style="list-style-type: none"> <li>▫ Timely preparation &amp; submission of Invoices</li> </ul>

financing cost	
10. Operating Cost Control	<ul style="list-style-type: none"> <li>▪ Maintain Sales to others (Rubis Energy, Chevron, Total etc.)</li> <li>▪ Target sales of 1.33M gallons per month</li> <li>▪ Maximize interest income on revolving funds</li> <li>▪ Seek better payment terms from Suppliers/Toll Processing Contract</li> <li>▪ Seek to establish working capital facilities with most favourable terms</li> <li>▪ Consolidate banking relationship for improved services and rates</li> <li>▪ Optimize workforce in line with business activities.</li> <li>▪ Schedule product transfers and receipts to minimize over time work.</li> <li>▪ Minimize Insurance premium in line with operating mode.</li> <li>▪ Negotiate, where possible, reduction in the cost of shared services provided by Petrojam.</li> </ul>
11. Staff development	<ul style="list-style-type: none"> <li>▪ Minimum of 40hrs training per staff</li> <li>▪ Staff motivation - performance incentive etc.</li> <li>▪ Maintain employee benefits program to attract quality personnel</li> </ul>
12. Effective Communication	<ul style="list-style-type: none"> <li>▪ Disseminate policies/procedures governing the operation of the company</li> <li>▪ Regular staff meetings to share company performance with employees</li> </ul>
13. Succession planning	<ul style="list-style-type: none"> <li>▪ Document new steps and procedures on an on-going basis.</li> <li>▪ Ongoing performance appraisals.</li> </ul>
14. Strengthen Shared Services Agreements with Petrojam	<ul style="list-style-type: none"> <li>▪ Cross training</li> <li>▪ Broaden responsibilities.</li> </ul>
15. Establishment of Executive Management Team	<ul style="list-style-type: none"> <li>▪ Review and re- negotiate Lease, Management Service Contract and Steam Supply Agreements with Petrojam Limited.</li> </ul>
16. Relocation to facilitate the Petrojam Refinery Upgrade	<ul style="list-style-type: none"> <li>▪ Expand management team as necessary to operate in an efficient manner</li> <li>▪ Develop and disseminate job descriptions for the recommended posts</li> <li>▪ Seek the necessary approvals for hiring or promoting to</li> </ul>

	<p>fill the positions when appropriate</p> <ul style="list-style-type: none"> <li>▪ Continue the efforts to find suitable site to relocate plant and storage facilities as necessary</li> <li>▪ Outline plan and cost for relocation based on the options available</li> </ul>
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**7.2 ACHIEVEMENTS FOR FINANCIAL YEAR 2014/2015**

Petrojam Ethanol Limited (PEL) started the FY 2014/15 without any Toll Processing Agreement. Based on the adverse market situation, there were no opportunity for a processing and as such the operation of PEL was focused on securing ethanol supply for the local gasoline blending at the most economical market price. In the meantime, the management continued its efforts to resume production activities at the plant. As a result, the following were the general directives:

- When viable to operate its ethanol dehydration facility guaranteeing the requisite quality and quantity of ethanol at the least cost to the trade.
- Seek to identify suitable projects for the development of feedstock locally to support ethanol dehydration activities at the plant.
- Develop and strengthen relationship with the local sugar cane industry for the production of ethanol feedstock sufficient to sustain dehydration activities in Jamaica.
- Seek assistance, where available, for the development of alternative feedstock, such as; ethanol from cellulosic and bio-mass materials.

For the FY2014/15 the operations of PEL continue to be profitable although there were no income realized from production. The volumes of anhydrous ethanol required to meet the demand for local gasoline blending during the period were sourced from the USA and Brazil. The local customers for the FY2014/15 were Petrojam Limited and Rubis Energy Jamaica. On the trading side, sales were above target. See year-to-date summary of operation up to January 2015 in Table 4 below:

**Table 4**

<u>Financial</u>			
Sales Revenue & Other Operating Income	J\$5,395,363,618	J\$4,524,044,212	(871,319,406)
Gross Margin	J\$262,701,134	J\$232,990,968	(29,710,166)
Profit (before tax)	J\$122,782,907	J\$114,889,862	(7,893,045)
Expenses (operating, administrative, other etc)	J\$162,907,083	J\$137,313,681	(25,593,402)
<u>Operation</u>			
Anhydrous Production (USG)	12,000,000	0	(12,000,000)
Feedstock Imported (USG)	12,600,000	0	(12,600,000)
No. Days Operations	100	0	(100)
Daily Production (USG/day)	120,000	0	(120,000)
Service Factor (%)	30%	0%	-30.0%
Losses (%)	0.5%	0.0%	-0.5%
<u>Sales &amp; Marketing</u>			
Local E10 Sales (USG)	16,825,200	14,081,064	(2,744,136)
Export Sales (USG)	6,200,000	0	(6,200,000)
<u>Personnel</u>			
Employees	6 full time + 5 part time	4 full time + 7 part time	-2 full time, + 2 part time
Training (no. of hours/person)	40	60	20
Accidents	0	0	0

### 8.0 MEDIUM TO LONG TERM FOCUS

The complexities and nuances of the international markets continue to be the guide for the operations of PEL into the future. Monitoring of the international economic developments and market trends as well as developing the flexibility to respond to sudden changes in the market are paramount for the survival of the CBI ethanol producing industry.

The ideal situation is for the local production and availability of ethanol from sugar cane feedstock to resume consistent operation of the PEL dehydration facilities. This is opportune for the country to increase renewable energy production and reduce the dependency on imported fossil fuels.

The sugar industry is a vital sector to the Jamaican economy as it provides foreign exchange and employment. However, the potential of the industry is still untapped. The sugar sector must be harnessed to contribute to the country's long term energy objective. Some analytical work and studies have already been done and are available. With the recent efforts in the adjustments for current situation and recent developments in the local and international markets, the potential for ethanol production by the local sugar cane sector must definitely be prioritized.

The ethanol supply and demand outlook shows that there will be regional imbalances that will require trade between the regions. In particular, North and Latin America are expected to have an excess of ethanol production while Asia Pacific and the EU are expected to rely on imports. Both Africa and the CIS should be balanced regions. Hart Energy has forecast a deficit of 1.9 billion liters (500 million gallons) of ethanol for the EU by 2015 and 500 million liters (140 million gallons) of ethanol for Japan in 2015. These two regions and countries are expected to require Brazilian ethanol for reasons of GHG savings and sustainability. However, Brazilian ethanol exports are not expected to reach that level in 2015.

Ethanol from CBI countries, including Jamaica, depends on the US Renewable Fuels Standards (RFS) programs for viable exports to that country. Under this arrangement advanced biofuels like ethanol produced from sugar cane stand to benefit from credit that will supplement marginal gains if traded in the US market. Although the secondary import tariff expired, there remains a chance for it to be re-instated. Ethanol growth in the USA has been significant over the years with the country being the largest exporter for several years. However, prices in the USA continue to be dynamic but there are expectations for prices to be more stable over the next few years based on the RFS2 programs that are currently in place. PEL has found prices for anhydrous ethanol originating in the USA to be most competitive, in general.

Ethanol from Brazil is the key source of supply for CBI ethanol industry until local feedstock becomes available. However, prices have remained out of reach for any sustainable period of supply which is uneconomical for the operation of the dehydration plants. Additionally, the constriction of the price of fuel in Brazil is preventing movements in the ethanol prices in line with actual production cost. PEL and the other CBI producers await the return of sugar and ethanol prices to previous lower levels in Brazil to realize favourable terms for the resumption of processing activities in the short term.

**Based on the current uncertainty of the market and with no medium to long term supply arrangements in place, no processing activities are projected for the calendar years 2016 and 2017 and as such the revenues forecasted for FY2016/17 and FY2017/18 are J\$5,393,011,691 and J\$5,546,660,917 respectively. This is projected to provide consistent profitability for the company.**

## **9.0 PROGRAMMES AND TARGETS FOR FINANCIAL YEAR 2014/2015**

### **9.1 STRATEGIC PLAN**

Sufficient ethanol will be sourced for importation into Jamaica by PEL as may be necessary to meet the supply contractual arrangements and the planned or unplanned demands of the local petroleum industry for gasoline blending. During this period there will be no defined plans for production activities. However, the ethanol dehydration plant will be kept in a state of readiness to be restarted on short notice when any of the efforts to acquire viable feedstock supplies is realized.

Under this plan PEL's obligations will remain as follows:

- Continuing to influence and support the development of ethanol in Jamaica from indigenous feedstock and in particular, sugar cane, with the aim of being self-sufficient for at least the local gasoline blending requirements.
- Obtaining and keeping all mandatory licenses required for the importation of the hydrous ethanol into Jamaica and the processing of the anhydrous ethanol, as well as all mandatory licenses which will be needed for the export of the anhydrous ethanol to the U.S. pursuant to the CBI's rules;
- Bearing full responsibility for the storage and handling of the ethanol at its facilities;
- Maintaining its facilities, insured against all risks by a recognized insurance company, and maintaining plant staff capable and sufficient for the purpose of any contractual arrangement;
- Ensuring that all hydrous ethanol received is expeditiously handled ensuring that all import duties, government fees, taxes or imposts connected with the clearance, are promptly paid;
- Guaranteeing that sufficient ethanol is purchased for sale and distributed as may be necessary to meet the targets of any contractual arrangement;
- Ensuring that the anhydrous ethanol is loaded on the client's designated vessel in a timely manner for delivery to such destinations as is required from time-to-time;
- Meet Jamaica's captive demand of approximately 18 million gallons per annum for gasoline blending.

The long term viability of PEL is predicated on the preferred option of tolling or basic trading based on economic or other challenges adversely affecting the consistency of the business margin at the time. Some of the factors that benefits PEL are noted below:

- Modern plant with nominal capacity of 40 million gallons per year
- Access to the Petrojam Berth in the Port of Kingston
- Storage tank with working capacity of 5.28 Million US Gallons available for hydrous ethanol receivals and storage representing approximately six (6) weeks supplies.
- Storage tank with working capacity of 2.64 Million US Gallons available for anhydrous ethanol storage and shipping.

Given the unfavourable economics for tolling, the projections for the period will be developed around the basic trading model. This simply involves the purchase of the finished product by PEL and selling it to the Petroleum industry as needed. With its current asset structure, PEL source anhydrous ethanol on behalf of gasoline blenders and supply at a margin which ensures that the operation can be profitable. Ethanol will be sourced primarily from the USA or Brazil except in the odd instances where better prices are available elsewhere.



Ethanol for gasoline blending will be transferred from storage to Petrojam Kingston Industrial Loading Rack via existing interconnecting pipelines and pumping system. For ethanol deliveries to Petrojam Montego Bay Industry Loading Rack and all other terminals, the ethanol will be delivered via ocean-going vessels that will load at one of Petrojam berth in the Port of Kingston. The total volume projected for the period is 16.3 million gallons of which Petrojam is scheduled to use 88.4% and the remaining 11.6% distributed to the other petroleum marketing companies.

The base resources for all three (3) years will be filled with existing positions outlined in the organization chart. Supplementary resources will come from Petrojam Limited primarily in the areas of utilities supply, equipment maintenance, accounting services, shipping services, laboratory testing services, human resource development services, and some technical support through established Shared Services Agreements. It is the intention of the parent company, PCJ, to merge some of these services with the head office operation within this period.

Capital expenditure for the FY 2015/16 is projected at J\$19.2M and for the FY2016/17 and FY2017/18 at J\$6.5M and J\$6.6M per year respectively. Majority of these amounts are planned for maintenance spares, instrument for improved quality control and alternative water supply preparations.

## *9.2 OPERATING PLAN*

To perform the business of the company with the primary objective being ethanol production and trading utilizing plant and storage facilities owned and operated by Petrojam Ethanol Limited.

With the adverse market conditions for ethanol feedstock supplied from Brazil or other external sources, production activities are projected to be at a minimal, if any, over the next year as the outlook for an economically viable operation of the plant to supply ethanol for export and local gasoline blending at competitive prices is unfavourable. The prospects for FY2016/17 and FY2017/18 are projected to continue in a similar manner and will be assessed in light of market conditions in the coming months.

During the periods of non-production the plant will be properly laid-up and retained in a reasonable state of readiness to avoid extensive preparation and lead time if processing is required at short notice. In addition, the necessary equipment maintenance will be planned and executed as required to keep the operable interconnections for the supply of ethanol to all customers in a safe and good condition.

The staff complement for the period will come primarily from the existing 13 employment positions outlined in the organization chart with a maximum of eight (8) persons assigned to ethanol operations. Additional resources that will be required will come from Petrojam Limited primarily in the areas of utility supplies, maintenance services, shipping logistics, laboratory services and safety & environment. Resources in the areas of accounting services, human resources administration/development,

Information Systems and other technical support will continue to be provided by Petrojam Limited with possibilities for transitioning to the parent company during the period. Shared Services agreements are in place with Petrojam to allocate and offset the cost of these services appropriately.

As it relates to ethanol supplies, the projection is for the importation of seven (7) cargoes of approximately 2.5 million gallons of anhydrous ethanol between April 2015 and March 2016. No exports are projected. Sales to Petrojam and directly to other petroleum marketing companies will be ex-tank. Ethanol will be transferred to Kingston Industry Loading Rack by pumps via pipelines and smaller intermediate storage tanks. Petrojam Mo-Bay terminal and external customers will receive ethanol from the main anhydrous ethanol storage tanks via pipeline to an ocean-going vessel berthed at one of the two ship docks operated by Petrojam.

All local sales will be considered as imports by the buyer as PEL operation is classified in a free-zone.

The bases and assumption for the 3-years operation 2015/16 - 2017/18 are outlined in table below:

Key Elements		Unit	Assumptions	2015/16	2016/17	2017/18
General	Inflation	%	Based on Ministry of Finance Projection	7.80%	7.50%	7.10%
	Growth	%	Based on Ministry of Finance Projection	1.70%	2.10%	3.00%
	FX Rate	US\$/S\$	Current	\$115.00	\$118.00	\$120.00
Blending	Local Volume (Anhydrous)	M USGal	Projections for local E10 gasoline blending	16.3	16.6	17.1
	Purchase Price (Anhydrous)	US\$/Gal	Based on monthly avg. NYH Platt prices + 15 US cents	\$2.57	\$2.59	\$2.52
	Selling Price (Anhydrous)	US\$/Gal	Based on historic market price + markup	\$2.67	\$2.69	\$2.62
	Anhydrous Inventory - Closing	M USGal	Estimated inventory at March 31st	1.56	0.26	1.00
	Revenue from Blending	US\$M	Estimated Income for ethanol supplies to local blenders	\$43.47	44.76	44.88
Production	Service Factor	%	Plant uptime during toll processing	0%	0%	0%
	Production Volume	M USGal	Projection for processing (short - medium term)	0.0	0.0	0.0
	Production Time	days	Projection for processing (short - medium term)	0	0	0
	Imported Volume (Hydrous)	M USGal	Projection for processing (short - medium term)	0.0	0.0	0.0
	Export Volume (Anhydrous)	M USGal	Projections for export during production	0.0	0.0	0.0
	Processing Fee	US\$/Gal	Based on historic industry rates and operating cost	\$0.000	\$0.000	\$0.000
	Steam	US\$M	Avg Demand = 0 lbs/hr @ US\$28-34/1000 lbs	\$0.0	\$0.0	\$0.0
	Electricity	US\$M	Demand = 10 MHP (max in) @ US\$6.42/Kwh	\$4.2	\$4.5	\$4.8
	Water	US\$M	Demand = 0.002m <sup>3</sup> /hr consumed @ US\$613-708/m <sup>3</sup>	\$0.9	\$0.9	\$1.0
	Hydrous Inventory - Closing	M USGal	Estimated inventory at March 31st	0.0	0.0	0.0
	Production Staff	No.	Variable production staff (Min=9 and Max=9)	8	8	8
	Revenue from Production	US\$M	Estimated income from toll processing activities	\$0.0	\$0.0	\$0.0
Misc.	Administrative Staff	No.	Maintain current staff (permanent + contractual)	3	3	3
	Shared Services - Petrojam	US\$M	Fixed Cost with annual adjustment for inflation	\$6.00	\$6.45	\$6.64
	Lease	US\$M	Fixed Cost	\$12.00	\$12.00	\$12.00
	Dock Berthing Facilities	No.	The Petrojam main dock & Petrojam EKT are available	2	2	2

## 10.0 BUDGETARY PROPOSAL FOR FINANCIAL YEAR 2015/2016

The budgetary proposal for the Financial Year 2015/2016 is outlined as follows:

Operation	Budgeted (US Gal)
Imports	
Production	16,300,000
Local Sales	0
Exports	16,296,000

Financial	Budgeted (\$'000)
Sales Revenue & Other Income	5,111,507
Gross Margin	163,093
Profit (before tax)	107,058
Expenses (operating, administrative, etc.)	148,979



Phillip Paulwell  
Minister

Science, Technology, Energy & Mining

April 13, 2015

MINISTRY PAPER NO: \_\_\_\_\_

## PERFORMANCE OF WIGTON WINDFARM LIMITED (WWL) FOR FINANCIAL YEAR 2014/2015 AND PRIORITY FOCUS FOR FINANCIAL YEAR 2015/2016

### I. PURPOSE OF MINISTRY PAPER

The purpose of this document is to update Parliament and the public in respect of the performance of Wigton Windfarm Limited (WWF) for the financial year 2014/2015 and to set out its focus for fiscal year 2015/2016.

#### 1.0 INTRODUCTION

Wigton Windfarm comprises two phases: Wigton I (20.7 MW) and Wigton II (18 MW). At approximately 30% capacity factor, the projected annual outputs are 97.5GWH and 76,291 metric tonnes of carbon emission reductions (CERs), respectively.

Wigton Phase III project was selected by the Office of Utilities Regulation (OUR) to expand the Wind Farm by 24MW. Ground-breaking for the project took place on February 20, 2015. The implementation is being financed with 20% equity and the balance via a loan from the PetroCaribe Development Fund (PCDF). This project will provide approximately 125 temporary jobs, during construction, and 3 additional engineers on a permanent basis after commissioning.

#### 2.0 MISSION

The mission of Wigton Windfarm Limited (WWFL) is to provide, and/or facilitate, increased wind energy development, along with other renewable energy sources for the generation of electricity, thereby contributing to the diversification of Jamaica's energy mix.

#### 3.0 VISION

The vision of WWFL is to be a catalyst for increased usage of wind power, and other renewable energy sources, to provide electricity to Jamaicans.

#### 4.0 CORE VALUES

- Honesty and openness
- High Ethical standards, teamwork and commitment
- Transparency
- Respect for the environment

#### 5.0 FINANCIAL PERFORMANCE

The unaudited financials for the period ended February 28, 2015 of the 2014/2015 financial year shows that the company realized a profit of J\$524 million, before taxation.

For financial year 2014/2015 up to February 2015 (11 months), the financial performance is:

	BUDGETED	ACTUAL	(ADVERSE)/ FAVOURABLE	
PARTICULAR	\$	\$	VARIANCE	VARIANCE EXPLANATION
	NO DATE	NO DATE	NO DATE	
	\$	\$	\$	
Income	1,489,839,002	1,504,713,456	14,874,454	Income was above budget by \$14M or 1% for the period ended February 2015; sales from the generation of electricity is below the target by J\$27M as a result of lower than projected wind regime, interest income was above budget by \$42M the company anticipated making equity contribution in March 2014, however, income was not above budget.
Less cost of sales	389,802,227	351,241,054	38,561,173	Cost of sales was J\$38.5 below budget as a result of lower than projected VARs charges, repairs and maintenance and lower than anticipated staff cost.
Gross profit	1,100,036,775	1,153,472,402	53,435,627	
Less expenses	555,711,042	629,947,376	(74,236,334)	Expenses were above budget by J\$74M as a result of the increase finance cost due to the foreign exchange loss adjustment. The company's loan with the PetroCaribe Development Fund is in United States Dollars and as the Jamaican Dollar depreciates, the company's finance expense is impacted negatively.
Profit before taxation	544,325,733	523,525,026	(20,800,707)	

## 6.0 BOARD OF DIRECTORS AND CORPORATE DATA

Ian Kelly - Chairman

Andral Shirley

Adrian St. Louis

Adrian Spencer

Donna Deidrick

Donna Arthurs

Yvonne Barrett-Edwards

**Senior Management**

Earl Barrett

Michelle Chin Lenn

Rohan Hay

Shaun Treasure

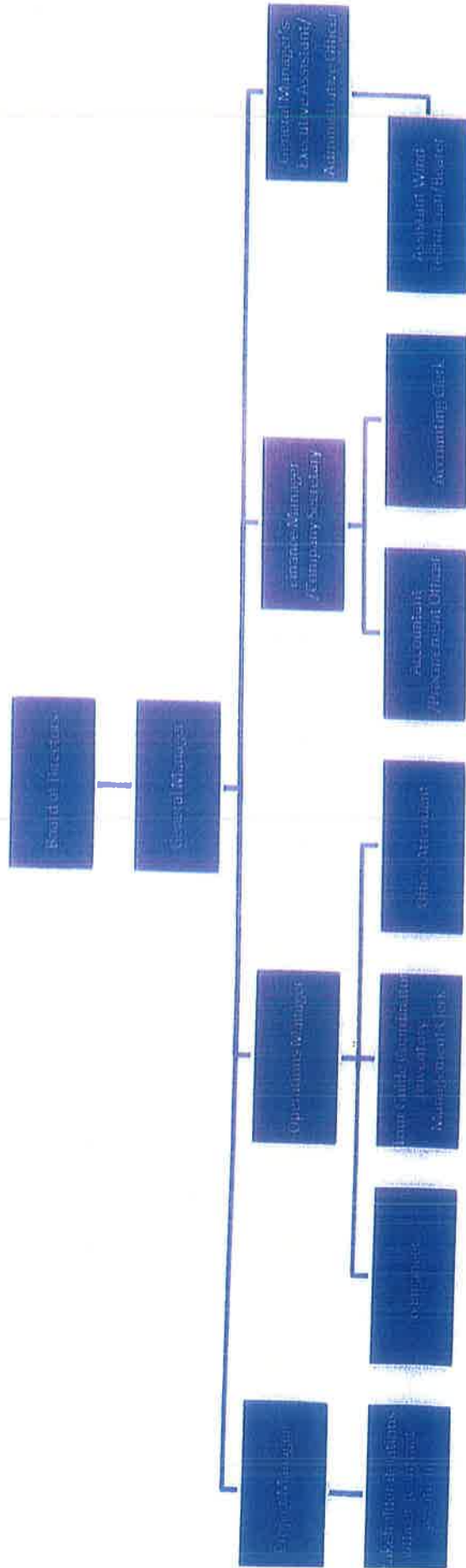
**General Manager**

**Project Manger**

**Operations Manager**

**Finance Manager/Company Secretary**

**ORGANIZATION CHART 2014/15**





## 7.0 OPERATIONS

For the financial year 2014/2015 the operational objectives were to:

- Efficiently operate the wind farm facility and contribute positively to the Group
- Develop and begin implementation of Wigton III (24 MW)
- Continue the development of staff capacity and technology transfer to the wider public in renewables

The key achievements are discussed in the items below.

## 8.0 DIVERSIFICATION OF JAMAICA'S ENERGY MIX

- Wind represents approximately 4.5% of Jamaica's energy mix by installed capacity with renewable energy (wind and hydro) representing approximately seven per cent (7.6%).
- The planned implementation of the Wigton III project would increase the installed renewable capacity to 9.9% assuming there are no other changes on the grid. When factoring in the planned WRB 20 MW solar project and BMR 36 MW wind project, along with the Wigton III project, the increase in renewable capacity to the grid projected for 2016 is 15% renewable energy by installed rated capacity. The Wigton III project contracting and permitting is underway for construction within the 2015/2016 financial year.
- Wind Expansion and Wigton's operations are aligned with the government's energy policy white paper goals 2, 3, and 4:
  - Goal 2: Jamaica has a modernized and expanded energy infrastructure that enhances energy generation capacity and ensures that energy supplies are safely, reliably, and affordably transported to homes, communities and the productive sector on a sustainable basis.
  - Goal 3: Jamaica realizes its energy resource potential through the development of renewable energy sources and enhances its international competitiveness and energy security whilst reducing its carbon footprint
  - Goal 4: Jamaica's energy supply is secure and sufficient to support long-term economic and social development and environmental sustainability.

## 9.0 ENVIRONMENTAL BENEFITS

April 2014 ~ February 2015	Wigton I	Wigton II
Tonnes carbon dioxide avoided	42,195	40,148
Barrels of oil avoided	29,761	32,246
Foreign Exchange saved for Jamaica (using US\$50/ barrel of oil)	US\$1,488,059	US\$ 1,612,283

## 10. TECHNOLOGY TRANSFER

Wigton Windfarm not only owns and operates wind farms but has a mandate to transfer renewable energy technology to Jamaicans and ultimately the wider Caribbean. Wigton Windfarm Limited has undertaken the following activities to aid this transfer:

- Hosted a one day workshop on wind energy for the National Irrigation Commission on May 26, 2014.
- Provide technical support to assist Munro College with the rehabilitation of their 225 kW wind turbine.
- Installed a 12 kW solar roof and small 400 W wind turbine in the Wigton Renewable Energy resource centre to enhance the training and demonstration features of the centre. This

project received grant support from the British High Commission in Kingston in the amount £27,887.

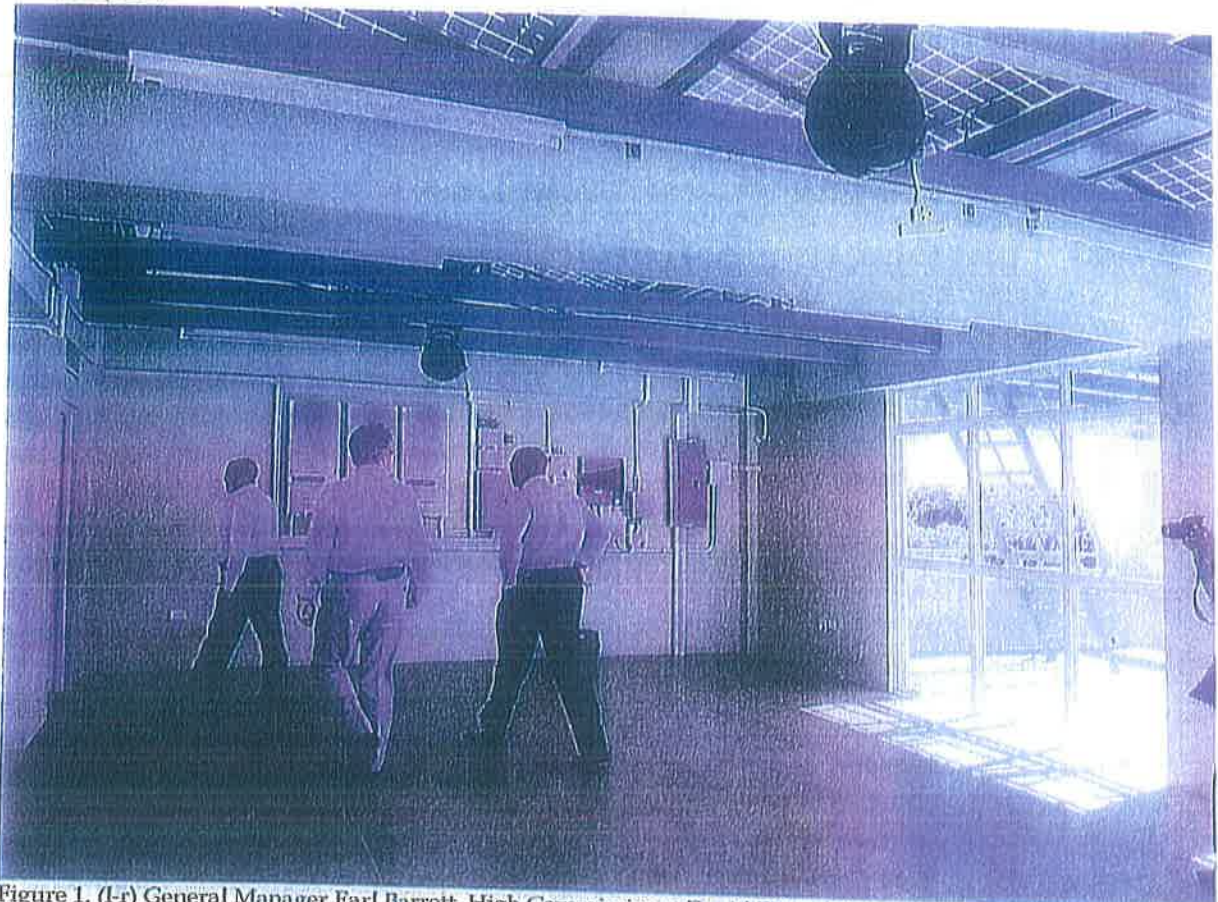


Figure 1. (l-r) General Manager Earl Barrett, High Commissioner David Fitton, Chairman Ian Kelly tour the solar roof enclosed lab space.

## 11.0 EXPANSION UPDATE

- The turnkey contract was signed with Spanish Company Gamesa Eólica S.L in January 2015 and the ground breaking was held in February 2015.
- The detailed engineering and studies will be carried out by Gamesa in the first quarter of 2015 and the construction works are projected to begin April 2015 for plant commissioning by early 2016.

The increased MW will realise the following:

- Power for 31,963 homes (based on average household usage of 1971 kWh/yr)
- Revenue of US\$8.4M annually, using a projected rate of US 13.3 cents/kWh
- Carbon Credits of 45 Metric Tonnes annually
- Increased percentage of renewable energy integration, by improving installed capacity from 7.6% to 9.9% towards the 2030 Renewable Energy target (30%).



Figure 2. Honourable Minister of Science, Technology, Energy and Mining, Phillip Paulwell giving remarks at Wigton III Ground Breaking Ceremony, February 20, 2015.



Figure 3: Ground Breaking for Wigton III Project, February 20, 2015.

## 12.0 WIGTON PLANT PRODUCTION

- Wigton supplied the following kilowatt hours of energy (kWh) to the JPSCo grid:

Year	Wigton I kWh sold to grid	Electricity Production Income (US\$ M)
April 2004 - March 2005	44,204,036	2.48
April 2005 - March 2006	51,433,650	2.89
April 2006 - March 2007	55,734,200	2.94
April 2007 - March 2008	53,216,750	2.94
April 2008 - March 2009	45,930,100	2.57
April 2009 - March 2010	59,407,632	3.61
April 2010 - March 2011	50,661,203	5.18*
April 2011 - March 2012	46,368,604	4.73
April 2012 - March 2013	56,474,801	5.77
April 2013 - March 2014	56,432,552	5.80
April 2014 - February 2015	<u>50,594,010</u>	<u>5.10</u>
<b>Total</b>	<b><u>570,457,538</u></b>	<b><u>44.01</u></b>

\* Note that the O.U.R. made a new rate determination for Wigton I effective February 2010 thus the increase in income from 2010.

Year	Wigton II kWh sold to grid	Electricity Production Income (US\$ M)
Dec. 2010 - March 2011	10,580,884	1.43**
April 2011 - March 2012	44,717,351	6.08**
April 2012 - March 2013	50,414,649	6.88**
April 2013 - March 2014	63,735,201	
April 2013 - February 2015	<u>54,817,618</u>	8.77**
<b>Total</b>	<b><u>224,265,703</u></b>	<b><u>7.54**</u></b>
		<b><u>30.7</u></b>

\*\* Note that a front loaded rate is applied for Wigton II.

### 13.0 ACHIEVEMENTS

#### High Plant Availability

For 2014-15 Wigton experienced high plant availability as at December 2014, Wigton I availability average was 89.9% and Wigton II availability average was 95.2%. The combined Wigton I & II availability average stands at 92.6%.

#### Safety

No major incidents or accidents for the period - 2014-2015.

#### Building Operational Capacity

Wigton currently operates the largest size wind turbines in Jamaica (2 MW size) at present thus is building capacity of local engineers to operate this new technology. Wigton Windfarm Limited took over the full maintenance of the Wigton II plant in July 2014, therefore; WWFL now fully maintains both phases of the wind farm without the overseas wind turbine supplier/contractor.

### Carbon Credits

Wigton remains the only company in Jamaica to have successfully registered Clean Development Mechanism (CDM) projects at the United Nations Framework Convention on Climate Change (UNFCCC). Wigton now has two projects registered. The original Emissions Reductions Purchase Agreement (ERPA) for Wigton I expired in 2012. WWFL executed an Emissions Services Agreement to develop and look for opportunities to market emissions reduction however, given the down turn in carbon trading markets, the administrative costs are higher than the value of the credits at present therefore no trading was done for the 2014/2015 period.

Many countries are moving towards setting up their own country carbon markets or cap and trade type mechanisms or other internal incentive internal structures to encourage green initiatives therefore, Jamaica should begin assessing such options from a policy perspective.

### 13.0 OUTLOOK FOR 2015 AND BEYOND

- Complete construction and Commissioning of the Wigton III (24 MW project)
- Commence collaboration with parent company on feasibility and finance of any future renewable energy projects for example solar.



Phillip Paulwell  
Minister

Science, Technology, Energy & Mining  
April 13, 2015

MINISTRY PAPER NO: \_\_\_\_\_

**PERFORMANCE OF THE RURAL ELECTRIFICATION PROGRAMME LIMITED  
FOR FISCAL YEAR 2014/2015 AND FOCUS FOR FISCAL YEAR 2015/2016**

**1.0 PURPOSE OF MINISTRY PAPER**

The purpose of this document is to inform Parliament and the public about the performance of the Rural Electrification Programme Limited (REP) for the 2014/2015 Financial Year and its focus for the 2015/2016 Financial Year.

**2.0 MISSION**

The mission of the REP is to contribute to the economic growth and development of the country by providing affordable access to electricity island wide and regularizing urban electrification.

**3.0 BACKGROUND**

**3.1 REP'S MANDATE**

The Rural Electrification Programme (REP) was incorporated in 1975 as an executing agency of the Government, following a feasibility study which indicated a need for rural electrification and a dedicated unit for its implementation. The Company was formed to carry out the expansion of electricity services to rural areas, where the expansion of such service would not be financially viable to a commercial electricity retailer such as the JPSCo. Its mandate is to construct electrical distribution pole lines in non-electrified areas and the provision of house wiring assistance through affordable loan programmes to householders who would be given access to the service by the newly erected lines. Additionally, REP offers house-wiring assistance to needy householders in already electrified areas through a Revolving Fund Programme. During its existence the REP has facilitated access to electricity in approximately 75,000 accounts up to March 2012. Approximately 97.5% of rural areas now have electricity. This has facilitated the development of economic & social activity in the communities involved.

**4.0 FUNCTION**

The primary role and functions of the Agency are to:

- Provide rural householders with affordable access to electricity in order to raise their standard of living.
- Engender the removal of the threat to personal and property safety posed by illegal abstraction of electricity and faulty house wiring.
- Provide electrical engineering services to other government and private sector entities.

In carrying out these functions the REP works closely with Government Electrical Inspectorate, Parish Councils, Land Agency, JPS and Paymaster to ensure the success of the programme.

The REP currently has three main programmes - These can be segmented into

1. Constructing single phase distribution pole lines
2. House wiring
3. Special Projects

As at March 2015 the REP has implemented the following projects:-

GOJ 2014/15 (10km and 375 Houses): The parishes which benefited include: Portland, St. Mary, Westmoreland, St. Ann, St. Catherine, Clarendon, Manchester, St. Elizabeth and St. Thomas. The source of funding is through GOJ and Constituency Development Fund (CDF).

#### GOJ 2014/2015 House Wiring Projects

Under this Programme the REP provided house wiring services to customers who benefitted from newly constructed distribution lines.

#### 2014/2015 Special Projects

Under this Programme the REP solicited jobs for the construction of electrical distribution lines from other Government agencies and private companies.

### **5.0 OBJECTIVES AND TARGETS FOR FINANCIAL YEAR 2014/2015**

For the 2014/2015 Financial Year, the REP was allocated a revised budget of \$231.12. The REP's budget for the financial year 2014/2015 reflected an increase of \$102.8M or 80% when compared with the amount of \$128.3M approved for the 2013/2014 financial year. The planned targets for the 2014/2015 financial year were to:

- a) Rebrand the REP with a new name as an energy solutions company in the renewable and conventional energy market;
- b) Diversify the range of services provided by the company to include energy audits, the design and implementation of renewable solutions for the private and public sector stakeholders and pole line design work for other government agencies such as NHT and HAJ;
- c) Complete the 10km of pole line extensions under the GOJ Programme;
- d) Effect the wiring of 375 houses under the GOJ Programme;
- e) Secure project funding through various energy funds and from the Constituency Development Fund (CDF);

- f) Prepare architectural designs for construction of new 'green and environmentally friendly office building; and
- g) Stage an inaugural energy exposition and investment conference.

**6.0 HIGHLIGHTS OF ACHIEVEMENTS - FINANCIAL YEAR 2014/2015**

The REP achieved a good measure of success in the pursuit of its core functions during the financial year. The work of the organization was somewhat constrained by limited financial resources during the first half of the financial year. The organization however attained much through dynamic leadership and a highly motivated staff.

**6.1 TABLE 1: SUMMARY OF ACHIEVEMENTS FOR FINANCIAL YEAR 2014/2015**

TARGET	ACTUAL
1) Re-branding the REP	An updated Cabinet Submission was dispatched for review by the Ministry of Finance & Planning. The Cabinet Paper was subsequently submitted to Cabinet for consideration. The Cabinet Submission delineated the expanded role that the REP proposes to play in the dynamic energy market.
2) Diversification of Services	<p>The REP embarked on a thrust to diversify its services through the provision of pole line design and engineering services for other government agencies. The company realized a good measure of success in its quest to become more commercialized. The REP during the period under review executed the following works:</p> <ul style="list-style-type: none"> <li>a. <b>Ministry of Agriculture - Sugar Transformation Project.</b> The REP executed contracts to the value of \$93.98M with the Ministry of Agriculture for the implementation of 16.12km of pole line extensions under the Sugar Transformation Programme. All 24 extensions under the Programme were duly completed and certified in Sugar Development areas of St. Thomas, Clarendon, Frome and Appleton.</li> <li>b. <b>Ministry of Transport &amp; Works - Crooked River</b> A contract to the value of \$6M was executed with the Ministry of Transport &amp; Works for the provision of engineering services at Crooked River in St. Mary. The Pole Line extension which was approximately 1.5Km was completed and certified by the Government Electrical Inspectorate (GEI).</li> <li>c. <b>Housing Agency of Jamaica (HAJ)</b></li> </ul>



TARGET	ACTUAL
	<p>The REP executed a contract with the HAJ to the value of \$8.425M for the implementation of pole line extension at Bourkesfield. The project was under construction as at March 31, 2015.</p> <p><b>d. Complan Limited</b>  The REP executed contracts amounting to \$83.2M with Complan Limited for the construction of electrical distribution lines in the following three housing sub-divisions:</p> <ul style="list-style-type: none"> <li>i. Bel-Air - St. Ann</li> <li>ii. Whitehall - Westmoreland</li> <li>iii. Luana - St. Elizabeth</li> </ul> <p><b>e. JPS - Hope Pastures</b>  The REP undertook a Project which entailed the conversion of underground wiring to an overhead system for JPS customers residing in Hope Pastures. House Wiring works to the value of \$6.2M were completed on Keeble Crescent and Glendon Circle for a total of forty (40) customers during the period under review. The works are ongoing and will be extended to other areas in Hope Pastures during the ensuing financial year.</p> <p>The Special Projects are expected to provide electricity for approximately 5,613 persons when completed while generating employment for over 175 persons.</p>
3) GOJ 2014-2015 - 10.0km	A total of 11 Pole Line Extensions were constructed in 6 parishes. Extensions representing 8.0km were completed in six parishes. The completed pole line extensions are expected to provide electricity to approximately 144 customers. The extensions will impact the lives of approximately 720 persons in the respective communities.
4) GOJ Marketing Programme	360 houses have been marketed within 31 extensions and 108 customers have responded by paying their deposits.
5) GOJ House Wiring Programme	161 houses were wired during the period under review at a cost of \$7.245M. A total of 122 houses were GEI certified during the period.
6) Lighting Ceremonies	The company convened a total of six lighting ceremonies in five parishes during the period under review. The lighting ceremonies have been successful in highlighting

TARGET	ACTUAL
	<p>communities that have just received electricity. These communities included Barry/Springvale, Georges Plain/Bamboo, Evergreen, Llandilo Land Settlement, Roseberry/Malvern and Douglas Castle. The lighting ceremonies have accentuated the work that is being done by the REP for various communities.</p>
7) Architectural Design for New Building	<p>The REP commissioned an architectural design for a new office building to replace the existing 40 year old board building located at 113 Washington Boulevard. The architectural plans were completed by Taylor Architects.</p>
8) CDF Funding	<p>The REP obtained funding of four million, fifty two thousand eight hundred and seventy five dollars (\$4,052,875.00) through the Constituency Development Fund for the implementation of pole line extensions in Central Westmoreland, St. Catherine North Central and St. Elizabeth South Western.</p>
9) Inaugural Energy Exposition and investment conference	<p>The REP developed a Concept Paper for the implementation of an inaugural energy exposition and investment conference. A Steering Committee has also been established to manage the implementation of the Project. The services of an Event Planner were procured but suspended due to the desire to have the launch of the rebranded REP before proceeding with the energy exposition and investment conference. Funding for the Project is expected from Corporate Sponsorship.</p>

**7.0 - CORPORATE PLAN - SUMMARY OF MAIN PROGRAMMES 2015/2018**

Estimated Expenditure: \$230M excluding grants and project expenditure independently funded

Priority Policy Issues	Objectives/Policy Outcomes	Strategies	Performance measures/outcome Indicators	Major Tasks, Targets, Resources and Cost		
				Year 1 2015/16	Year 2 2016/17	Year 3 2017/18
Rebranding the REP	To transform the company so that it can adapt to changes in the energy sector.	<ul style="list-style-type: none"> <li>Re-launch the company as a diversified energy solutions company under the new name NESol Limited.</li> <li>Diversification into renewables</li> </ul>	Transformed company offering to include renewable energy solutions and a range of new services.	\$1.5M		
Diversification of Services	To provide renewable energy solutions, energy audits and pole line design services	<ul style="list-style-type: none"> <li>Research, develop and implement cutting edge renewable technology for wind and solar.</li> <li>Provide energy audits for governmental and private sector stakeholders</li> <li>Provide pole line design services</li> </ul>	<ul style="list-style-type: none"> <li>Access to renewable solutions from company</li> <li>Energy audits conducted for most government institutions</li> <li>Pole line design services offered for major housing projects</li> </ul>	Training and Equipment Acquisition Human Capital \$100M	Training and Equipment Acquisition Human Capital \$150M	Human and Financial Resources \$200M

<p>Electrification: Provide access to the entire Jamaica</p>	<p>Construct 30 km of distribution power lines</p>	<ul style="list-style-type: none"> <li>• Use of GOJ Funding</li> <li>• Private Sector Funding</li> <li>• Special Project Funding</li> </ul>	<ul style="list-style-type: none"> <li>• Expanded electrification of rural communities</li> <li>• Increased standard of living and economic development</li> </ul>	<p>\$120M</p>	<p>\$150M</p>	<p>\$200M</p>
<p>Stage an Energy Exposition and Investment Conference</p>	<p>Provide house wiring for 1,000 houses</p> <p>Heighten, in a substantial way, the nation's awareness of alternate energy solutions. Provide a platform for alternate energy stakeholders and merchants to promote their products and services. Establish linkages for the</p>	<ul style="list-style-type: none"> <li>• Engage Contractors for house wiring services</li> <li>• Seek Ministerial and Board Approval</li> <li>• Prepare Concept Document</li> <li>• Establish Steering Committee.</li> <li>• Book Venue</li> <li>• Procure Event Planner</li> <li>• Prepare Project Implementation Plan</li> <li>• Finalize Budget &amp; Funding.</li> <li>• Implement Project</li> </ul>	<ul style="list-style-type: none"> <li>• Lines electrified and all houses wired</li> <li>• Board and Ministerial Approval Obtained.</li> <li>• Concept Document Prepared and finalized</li> <li>• Steering Committee Established</li> <li>• Event Planner selected</li> <li>• Venue and date Finalized</li> <li>• Conference Sponsors,</li> </ul>	<p>\$45M</p>	<p>\$52.0M</p>	<p>\$54M</p>
				<p>\$38M</p>	<p>\$42M</p>	<p>\$42M</p>

	generation of new businesses and new FDI.	<ul style="list-style-type: none"> <li>Develop preliminary architectural designs</li> <li>Preparation of Cost estimates and Cost Benefit analyses.</li> <li>Explore grant/loan funding approvals</li> <li>Secure relevant approvals</li> </ul>	<ul style="list-style-type: none"> <li>Architectural Designs completed</li> <li>Project Document Prepared</li> <li>Funding sources identified and secured.</li> </ul>	\$50M	\$250M	
Solar Panel Assembly Plant/New Offices	To explore the feasibility of establishing a Solar Panel Assembly Plant and the construction of a "green" building to house NESol's administrative offices.	<ul style="list-style-type: none"> <li>Develop preliminary architectural designs</li> <li>Preparation of Cost estimates and Cost Benefit analyses.</li> <li>Explore grant/loan funding approvals</li> <li>Secure relevant approvals</li> </ul>	<ul style="list-style-type: none"> <li>Architectural Designs completed</li> <li>Project Document Prepared</li> <li>Funding sources identified and secured.</li> </ul>	\$50M	\$250M	
Development of an Upgraded Website for NESol Limited	Provide oversight of REP's Website Upgrade.	Procure Website Development services	Redesigned Website utilizing current tools to publish, interact, transact and integrate with citizens and clients.	\$2.2M		

8.0 OPERATIONAL PLAN - SUMMARY OF MAIN PROGRAMMES 2014/2015

Estimated Expenditure: \$230 Million

Priority Policy Issues	Objectives/Policy Outcomes	Strategies	Performance measures/outcome Indicators	Major Tasks, Targets, Resources and cost by Quarter			
				First Quarter (April 1- June 30, 2015)	Second Quarter (Jul 1- Sept 30, 2015)	Third Quarter (Oct.1 - Dec. 31, 2015)	Fourth Quarter (Jan.1 - Mar. 31, 2016)
Rebranding the REP	To transform the company so that it can adapt to changes in the energy sector.	<ul style="list-style-type: none"> <li>o Create a new name for the company</li> <li>o Diversification into renewables</li> </ul>	Transformed company offering energy solutions and a range of new services	\$1M	\$0.3M	\$0.2M	
Diversification of Services	To provide renewable energy solutions, energy audits and pole line design services	<ul style="list-style-type: none"> <li>o Research, develop and implement cutting edge renewable technology for wind and solar.</li> <li>o Provide energy audits for government and private</li> </ul>	<ul style="list-style-type: none"> <li>o Access to renewable solutions from the company</li> <li>o Energy audits conducted for most government institutions</li> <li>o Pole line design services offered for major housing</li> </ul>	Training and Equipment Acquisition Human Capital \$30M	Training and Equipment Acquisition Human Capital \$40M	Training and Equipment Acquisition Human Capital \$15M	Training and Equipment Acquisition Human Capital \$15M

Priority Policy Issues	Objectives/Policy Outcomes	Strategies	Performance measures/outcome Indicators	Major Tasks, Targets, Resources and cost by Quarter			
				First Quarter (April 1- June 30, 2015)	Second Quarter (Jul 1- Sept 30, 2015)	Third Quarter (Oct.1 - Dec. 31, 2015)	Fourth Quarter (Jan.1 - Mar. 31, 2016)
		<ul style="list-style-type: none"> <li>sector stakeholders</li> <li>Provide pole line design services</li> </ul>	<ul style="list-style-type: none"> <li>projects</li> </ul>				
Electrification Provide access to the entire Jamaica	<ul style="list-style-type: none"> <li>Construct 30 km of distribution power lines</li> <li>Provide house wiring for 1,000 houses</li> </ul>	<ul style="list-style-type: none"> <li>Use of GOJ Funding</li> <li>Private Sector Funding</li> <li>Special Project Funding</li> <li>Engage Contractors for house wiring services</li> </ul>	<ul style="list-style-type: none"> <li>Expanded electrification of rural communities</li> <li>Increased standard of living and economic development</li> <li>Lines electrified and all houses wired</li> </ul>	\$30M	\$30M	\$30M	\$30M
Stage an Energy	Heighten, in a substantial way.	<ul style="list-style-type: none"> <li>Seek Ministerial</li> </ul>	<ul style="list-style-type: none"> <li>Board and Ministerial</li> </ul>	\$4M	\$4M	\$30M	\$5M

Priority Policy Issues	Objectives/Policy Outcomes	Strategies	Performance measures/outcome Indicators	Major Tasks, Targets, Resources and cost by Quarter			
				First Quarter (April 1- June 30, 2015)	Second Quarter (Jul 1- Sept 30, 2015)	Third Quarter (Oct.1 - Dec . 31, 2015)	Fourth Quarter (Jan.1 - Mar. 31, 2016)
Exposition and Investment Conference	the nation's awareness to alternate energy solutions. Provide a platform for alternate energy stakeholders and merchants to promote their products and services. Establish linkages for the generation of new businesses and new FDI.	<ul style="list-style-type: none"> <li>and Board Approval</li> <li>Prepare Concept Document</li> <li>Establish Steering Committee</li> <li>Book Venue</li> <li>Procure Event Planner</li> <li>Prepare Project Implementation Plan</li> <li>Finalize Budget &amp; Funding.</li> <li>Implement Project</li> </ul>	<ul style="list-style-type: none"> <li>Approval Obtained.</li> <li>Concept Document Prepared and finalized</li> <li>Steering Committee Established</li> <li>Event Planner selected</li> <li>Venue and date Finalized</li> <li>Conference Sponsors, Themes, Programmes. Budgets, Participants finalized.</li> </ul>				
Solar Panel Assembly Plant/New Offices	To explore the feasibility of establishing a Solar Panel	<ul style="list-style-type: none"> <li>Develop preliminary</li> </ul>	<ul style="list-style-type: none"> <li>Architectural Designs completed</li> </ul>	\$1M	\$1M	\$20M	\$28M



Priority Policy Issues	Objectives/Policy Outcomes	Strategies	Performance measures/outcome Indicators	Major Tasks, Targets, Resources and cost by Quarter			
				First Quarter (April 1- June 30, 2015)	Second Quarter (Jul 1- Sept 30, 2015)	Third Quarter (Oct.1 - Dec . 31, 2015)	Fourth Quarter (Jan.1 - Mar. 31, 2016)
	<p>Assembly Plant and the construction of a "green" building to house NESol's administrative offices.</p>	<p>architectural designs</p> <ul style="list-style-type: none"> <li>Preparation of Cost estimates and Cost Benefit analyses.</li> </ul>	<ul style="list-style-type: none"> <li>Project Document Prepared</li> <li>Funding sources identified and secured.</li> </ul>				
<p>Development of an Upgraded Website for NESol Limited</p>	<p>Provide oversight of REP's Website Upgrade.</p>	<p>Procure Website Development services</p>	<p>Redesigned Website utilizing current tools to publish interact and integrate with citizens and clients.</p>	\$2.2M			

## 9.0 SUMMARY OPERATIONAL PLAN FOR FINANCIAL YEAR 2015/16

9.1 The proposed targets for the Financial Year 2015/16 are as follows:

- h) Rebrand and re-launch the REP as the National Energy Solutions (NESol) Ltd - an energy solutions company in the renewable and conventional energy market.
- i) Diversify the range of services provided by the company to include energy audits, the design and implementation of renewable solutions for the private and public sector stakeholders and pole line design work for other government agencies such as Ministry of Agriculture & Fisheries, National Housing Trust (NHT) and Housing Agency of Jamaica (HAJ).
- j) Complete the 30 km of pole line extensions under the GOJ Programme.
- k) Effect the wiring of 1000 houses under the GOJ Programme.
- l) Upgrade NESol's website.
- m) Upgrade IT infrastructure, including server.
- n) Secure project funding through various energy funds and from the Constituency Development Fund (CDF).
- o) Effect plans for the Staging of an inaugural energy exposition & investment conference.
- p) Revisit role as a strategic partner of the JPS Loss Reduction Programme.
- q) Preparation of feasibility study to establish solar panel assembly plant.

## 10.0 BUDGETARY ALLOCATION

The operations of the REP will be funded by the usual budgetary allocation along with revenues to be generated from the diversification of the REP's services. Funding for specific Renewable Projects will be sought from the Petro Caribe Fund and other sources of funding.



Phillip Paulwell  
Minister

Science, Technology, Energy and Mining  
April 13, 2015

# MINING

MINISTRY PAPER NO. \_\_\_\_\_

**PERFORMANCE OF THE CLARENDON ALUMINA PRODUCTION COMPANY LIMITED (CAP) FOR FINANCIAL YEAR 2014/2015 AND FOCUS FOR FINANCIAL YEAR 2015/2016**

**1.0 PURPOSE OF MINISTRY PAPER**

The purpose of this document is to update Parliament and the public in respect of the performance of Clarendon Alumina Production Limited (CAP) for the Financial Year 2014/2015 and to set out its focus for the Financial Year 2015/2016.

**2.0 INTRODUCTION**

Clarendon Alumina Production Limited (CAP) executes a joint venture called JAMALCO, with General Alumina Jamaica LLC (GAJ), a company wholly owned by General Alumina Holdings Limited (GAJ), which is fully owned by Noble Group (SGX:N21). Prior to January 16, 2015, General Alumina Jamaica operated under the name ALCOA Minerals of Jamaica (AMJ), a company owned until December 1, 2014 (when it was acquired by Noble Group through GAJ), by ALCOA World Alumina LLC, and ALCOA Caribbean Holding, LLC, collectively called AWA (60% ALCOA in and 40% Alumina Limited formerly Western Mining Corporation Australia).

CAP executes and monitors programmes to facilitate the effective and efficient performance of the JAMALCO alumina refinery. Since April 2007 and following on the completion of the Early Works Expansion of approximately 150,000 tonnes, CAP's share of the joint venture has been adjusted from 50% to approximately 45%, as AMJ's owner ALCOA funded 100% of the cost of that project. The alumina refinery has a production capacity of approximately 1.42 million metric tonnes (MMT) per annum, reflecting an expansion, since 1984 of about 940,000 tonnes per annum. At the 1.42 MMT capacity, CAP's 45% entitles it to approximately 637,500 tonnes per annum.

In summary, sale of the AMJ's interest in the Jamalco affects the joint venture in the following major ways.

- a. AMJ the 55% stakeholder has changed ownership (AWA to Noble);
- b. Alcoa World Alumina LLC(AWA) will continue to manage the refinery for up to a 3 year transitional period, under a Management and Transition Services Agreement (MTSA); between AWA, CAP and AMJ;
- c. A new joint venture agreement is being implemented between CAP and AMJ.

The new joint venture partner, Noble Group (SGX: N21) manages a portfolio of global supply chains covering a range of industrial and energy products, as well as having a 49% interest in Noble Agri, its agricultural partnership with COFCO. Operating across a multitude of locations and customers, Noble facilitates the marketing, processing,

financing and transportation of essential raw materials. Sourcing bulk commodities from low cost regions such as South America, South Africa, Australia and Indonesia, the Group supplies high growth demand markets, particularly in Asia and the Middle East. In order to ensure the integrity of its supply chains, the Group has a portfolio of interests in strategic logistics and processing assets which form an integral part of facilitating its key trade flows. They were ranked number 76 in the 2014 Fortune Global 500.

### 3.0 BACKGROUND

#### CAP'S ORIGINAL MANDATE

Clarendon Alumina Production Limited (CAP) was created in 1985 as a strategic response to a number of adverse developments, which threatened the local industry and the overall economy, in areas such as employment, foreign exchange earnings and revenues to Government. Among these developments was the decision by ALCOA Minerals to close the plant, without giving prior notice to the Government, its partner, which had a right under the Joint Venture agreement to buy production not wanted by ALCOA.

In fulfilling this mandate, CAP has contributed approximately US\$1.1 billion in net levy and royalty payments and has made an overall cash contribution to the economy, since its inception, of approximately US\$1.4 billion. The JAMALCO operation continues to be a mainstay of the economy of the south central region of the country. The plant provides direct employment for approximately 700 persons.

### 4.0 PRIVATISATION

Several efforts were made since 2008 to sell CAP's share of the Jamalco asset as a means of relieving the GOJ of all expenses associated with the Company's participation in the Jamalco joint venture while keeping that operation running. Notwithstanding the difficulty in selling an alumina facility at a stage that was definitely not a seller's market, (given the price of alumina prevailing and the cost of energy, especially in Jamaica where the more expensive Heavy Fuel Oil (HFO) is the fuel used), a suitable arrangement was arrived at with Noble Resources in June 2013. That arrangement allows the Company to borrow, against its 45% interest in Jamalco (not the GOJ/the Jamaican economy) and to enter into an additional supply contract to sell alumina on significantly improved terms, such that the sale of the Government's share of Jamalco on unfavourable terms and the need for Government of Jamaica's support of CAP's participation in Jamalco will be avoided.

The way forward is being pursued within the framework of that agreement, with due regard for the obligations, responsibilities and opportunities that arise from this arrangement with Noble and within the context of the outlook for the world alumina industry and commodities markets. The expected thrusts and emphases of the new joint

venture arrangement and Jamalco's projections (after modifications reflecting CAP's assessment) are central to the Company's programmes.

## 5.0 ADDRESSING CAP'S FINANCIAL CHALLENGES

Between 2000 and June 2013 the Company had to endure financial stress, consequent to the following developments:

- Between 2000 and 2002 the Company incurred two loans amounting to US\$190 million to assist the country's fiscal budget and fund plant expansions. The fund managers required the establishment of fixed contracts to cover the debt servicing requirement of the loans.
- A wildcat strike in October 2001 which cost CAP 125,000 tonnes of alumina and net losses of US\$20 million.
- The high price of oil has, since 2003, cost the Company some US\$345 million beyond the annual amount spent in 2002.
- Hostile weather experienced since 2004, arising from six separate storms, contributed to the loss of an estimated 170,000 tonnes of alumina, a combined insurance excess cost of US\$16 million and is substantially responsible for the US\$35 million in production cost overruns to 2007, all of these being CAP's portion of the burden.
- Required funding by Jamalco since 2006 of approximately US\$412M (CAP's share: US\$185M) for new mining infrastructure and conversion of the residue disposal system.
- Major adjustments to the plant's inventory levels and liability provision requiring funding in 2007 of US\$11 million by CAP.

Between 2008 and March 31, 2013 Government provided approximately US\$270.5M to CAP. An additional US\$140M has been provided via the PetroCaribe Development Fund (PCDF) making the total financing US\$410M, including US\$41M paid for arrears incurred in 2007.

Between 2007 and the end of 2014, the Company had not hedged either market or commodity prices. These options of contract management were successfully used prior to that time to manage through challenging periods. The best opportunities for hedging were in mid-2008 when aluminium prices exceeded US\$3,000 per tonne and December 2008 when oil prices fell below US\$40 per barrel. Since the peak of the summer of 2008, LME prices fell to as low as US\$1,360 before recovering to the mid twenty hundreds and were in June 2013, the time of privatisation, about US\$1,850. The price of heavy fuel oil used at Jamalco was then close to US\$90 per barrel.

CAP's board has now seized the opportunity to commence hedging of its Heavy Fuel Oil (HFO) on a phased basis. It is keeping future commodity prices, including its own market prices, under constant review, so as to ensure that arising opportunities to protect the viability Company's operation are not missed.

## 6.0 OBSTACLES OVERCOME IN THE PRIVATISATION PROCESS

The agreement reached with Noble Resources followed protracted negotiations, primarily with Glencore 'on and off' between September 2008 and May 2013, with Alcoa following their enquiry in 2009 and with the Zhughai Hong Fong in 2010, aimed at privatising the asset.

Effective March 2013, the Government assumed US\$435M in principal and interest of the Company's debt obligations; US\$180.4M on the Bear Stearns Bond and US\$254.6M to other GOJ entities, including the PCDF. Removal of the debt was critical to preparing the Company for privatization.

CAP's board has continued its systematic review of the Jamalco operations undertaking initiatives that include:

- i. A revised mining plan to achieve savings and confirm availability of required 'economically processable' bauxite reserves. Initiation with Alcoa, an energy solution to reduce Jamalco's production cost by US\$40 to US\$50 per tonne of alumina.
- ii. Reviewing and ensuring identification of CAP's specific interest in Jamalco's assets, energy and bauxite.
- iii. Requiring efficiencies in plant production costs.
- iv. Requiring more specific reporting for services provided.
- v. Revising the procedure for approval and reporting regarding plant assets, major projects and major contracts.

## 7.0 ELEMENTS OF NEW OPERATING FRAMEWORK

The main elements of the arrangements with Noble are:

1. Noble Resources Limited ("Noble"), company, Noble Group Limited, is providing a US\$120million secured pre-payment facility to CAP for the sale of alumina, the financing to be disbursed between July 2013 and January 2015, with moratoria on interest to July 1, 2015 and principal until July 1, 2016.
2. CAP to sell Noble up to 6,075,000 tonnes of alumina over 12 years, commencing July 2013. (In progress with deliveries flowing to the mutual agreement of the parties).
3. CAP granting Noble first ranked security against CAP's interest in Jamalco, subject to the exchange offer and consent solicitation being undertaken on the CAP \$200M amortising notes expiring 2021 with an undertaking that immediately upon removal of the notes from CAP formal granting of the security of CAP's interest in Jamalco will occur. (Completed)

4. Granting Noble the right of first refusal to acquire CAP's interest in Jamalco and as an interim measure, the Government pledging the shares in CAP as security for the amounts advanced under the Prepayment Facility.

5. Noble being granted a right of first refusal to supply coal to Jamalco at commercial rates.

6. Noble, on a best efforts basis agreeing to work with CAP and Alcoa on analyzing and determining by December 2013 a coal based energy solution for Jamalco and has further indicated that it potentially will actively participate in this solution with an "earn-in" to the Jamalco JV. (In progress)

7. CAP appointing one Noble representative to the Jamalco Executive Committee. (Done)

As a part of the agreement with Noble, CAP's Balance Sheet has been significantly improved. This was effected through a debt exchange offer that transferred the year 2006 US\$200 million (face value) Bear Stearns Bond and other debt to the Government as shareholder. These steps have relieved the Company's Balance Sheet in support of the privatisation initiative.

The prospects of increasing the value of the Jamalco assets, effecting an appropriate energy solution, improving the competitiveness of the plant to make it more attractive for investment and generally enhancing Jamalco's sustainability are objectives compatible with the new arrangement and remain the guiding targets.

In the new scenario, CAP which in January 2013 took over (from BATCO) the responsibility for marketing its own alumina and overall management of its contracts, now has two customers instead of one. New business paradigms and operating procedures are being pursued in undertaking this task.

#### **8.0 THE PRESENT OPPORTUNITY**

The opportunity presented in the Company's plans, reflecting the arrangement agreed with Noble has been enabling CAP to meet its obligations without the need to either:

a) Dispose of the public's interest in Jamalco under unfavourable market conditions and without realizing anything close to the potential value;

b) induce closure of the plant, as it would have become unattractive for the joint venture partner to keep it open on its own with production curtailed, or;

(c) Subjecting the public purse to operating risks that arise from the Jamalco venture.

With the opportunity presented to CAP the Company has been pursuing improved efficiencies, especially in the area of energy, settling arrangements for new mining areas based on new reserves and working with the joint venture partner (previously Alcoa



and now Noble) to improve management of the plant. These initiatives will provide the opportunity for the country to realize a true value for an important asset.

Alumina sales prices will average in excess of 14% of the London Metal Exchange Aluminium Price when the prices for contracts that existed previously are combined with the new ones. On completion of the obligation to supply Glencore at the end of this (2015) calendar year, the average London Metal Exchange (LME) basis will increase to about 15% for committed alumina. This should allow CAP to meet operating and sustaining capital costs for a properly managed plant.

Under the financing arranged funds were borrowed in the form of a line of credit and used, in the first instance during June 2013 to pay off bridge financing obligations to other public entities which had provided short term funding of CAP's liability to Jamalco of approximately US\$73M. Thereafter, it funds cash shortfalls expected between 2013 and 2015.

The arrangement has been allowing CAP to bridge the tight period between 2013 and 2015, after which both the projected aluminium price and the plant improvements should make the enterprise cash positive.

Noble has been integrally involved in the pursuit of a coal fired alternative for Jamalco and the grid. The process to select a bidder to build own and construct the facility is considerably advanced.

The long term energy solution will, along with efficiencies being pursued by the partners, undergird the future competitiveness of the Jamalco operation. In the interim there have been encouraging developments in the plant's operation, with low HFO prices and plant efficiencies implemented, leading to a significantly reduced cost of production.

The Company intends to continue working with Noble, the new owners of GAJ and new 55% joint venture partners to position the plant as a highly competitive independent alumina producer.

#### **9.0 PRIORITIES AND PROJECTIONS 2015/16 AND 2017-18 PRIORITIES:**

- a. Undergird privatization with an efficient operation and proactive commercial management.
- b. Keep interim power/energy performance stable.
- c. Introduce coal solution for long term.
- d. Meet target raw material consumption and production levels.
- e. Rationally phase and implement capital programmes.
- f. Take advantage of opportunities for capacity creep expansion and cost reduction.

The entity is expected to become cash positive in calendar year 2016. The line of credit from Noble along with strategic trade marketing and financing arrangements will be applied to manage through the difficult interim period.

#### 10.0 RECURRENT BUDGET

The recurrent budget for the 2015/16 financial year is projected to be US\$174.86 million.

Categories of Cost	Total (US\$M)
	2015/16
Salaries & Related Staff Costs	8.02 *
Board Expenses	0.02
Other Expenses	10.51
Cost of Goods Sold	156.31
<b>Total</b>	<b>174.86</b>

\* Salaries & Related Staff Cost for CAP's head office is US\$0.202M; the rest of the US\$8M is for plant administration.

#### 11.0 FINANCING THE BUDGET

Of the US\$174.86 million in recurrent cost, US\$21.9 million is for non-cash depreciation and depletion. Capital expenditure is projected at US\$23.98 million, a net difference of US\$2.08 million; making the overall cash need US\$176.76 million or US\$3 million less than projected revenue. For the FY 2015/2016 CAP is projected to collect revenue totalling \$192.46 million to meet its budgetary needs, a 24% increase above actual collections US\$121.792 million audited for 2013/2014.

A breakdown of the CAP's projected revenue plan for FY 2015/2016 is shown in the following table.

Revenue Categories	Revenue \$USM
Alumina Sales (Net of Royalty)	179.76
Other Income (Net)	
<b>TOTAL</b>	<b>179.76</b>

CLARENDON ALUMINA PRODUCTION					
QUARTERLY PROFIT AND LOSS FORECAST - 2015/16					
			US\$'000		
	TOTAL	Quarter	Quarter	Quarter	Quarter
	2015/16	1	2	3	4
<b>CURRENT REVENUE</b>					
Alumina Sales	181,253	43,947	35,865	51,362	50,079
Other Income	-				
GOJ Grant	-				
<b>TOTAL</b>	<b>181,253</b>	<b>43,947</b>	<b>35,865</b>	<b>51,362</b>	<b>50,079</b>
<b>CURRENT EXPENSES</b>					
Compensation					
A. Directors, Executive & Senior Managers					
Salaries ( General Manager)	79	20	20	20	20
Pension Fund ( Gratuity)	14		14		
Housing Allowance	-				
Utility Allowance	-				
All Others (Director's Fees)	18	5	5	5	5
B. Supervisory, Clerical & Production					
Wages & Salaries	180	45	45	45	45
Housing Allowance	-				
Utility Allowance	-				
All Others ( Pension Fund Expense)	7	1	2	2	2
Utilities ( Electricity, Water & Telephone)	4	1	1	1	1
Repair & Maintenance	-				
Rental - Building	5	1	1	1	1
Rental - Equipment	-				
Fuel	5	1	1	1	1
Interest	10,511	2,613	2,642	2,642	2,613
Depreciation & Depletion	20,968	5,242	5,242	5,242	5,242
Cost of Sales	135,343	35,079	32,188	34,658	33,417
Administrative & Other Operating Cost	7,729	2,002	1,812	1,952	1,963
Royalty	1,493	372	322	439	360
Taxes					
Deferred Income Tax	-				
<b>TOTAL</b>	<b>176,356</b>	<b>45,382</b>	<b>42,296</b>	<b>45,009</b>	<b>43,670</b>
<b>Net Profit/(Loss) before Taxation</b>	<b>4,896</b>	<b>(1,435)</b>	<b>(6,430)</b>	<b>6,353</b>	<b>6,410</b>

CLARENDON ALUMINA PRODUCTION			
FORECAST BALANCE SHEET			
	Budgeted	Forecast	Actual
	Year End	Year End	Year End
	March 2016	March 2015	March 2014
<b>NET ASSETS EMPLOYED</b>			
<b>Non-Current Assets</b>			
Property, plant and equipment	227,426	228,394	252,731
	2,884	2,884	2,884
	230,310	231,278	255,615
<b>Current Assets</b>			
Inventories	22,536	22,987	24,718
Taxation recoverable	-	-	-
Trade and Other Receivables	2,054	4,674	1,086
Deposits	13,625	10,338	17,981
Cash	525	676	635
	38,740	38,675	44,420
<b>Current Liabilities</b>			
Payables	21,360	38,089	43,683
Provisions	5,225	5,225	4,705
Taxation	7,792	7,792	7,792
Current portion of long term loans	16,579	16,074	5,976
Bank overdraft	-	-	-
	50,956	67,180	62,156
<b>Net Current (Liabilities)/Assets</b>	<b>(12,216)</b>	<b>(28,505)</b>	<b>(17,736)</b>
	<b>218,094</b>	<b>202,773</b>	<b>237,879</b>
<b>FINANCED BY</b>			
<b>Shareholder's Equity</b>			
Share Capital	75,393	75,393	75,393
Retained earnings	3,224	(13,430)	26,370
	78,617	61,963	101,763
<b>Non-Current Liability</b>			
Provisions	14,523	15,856	15,009
Retirement benefits obligations	719	719	719
Government grant			11,154
Long Term Loan	124,234	124,234	109,234
	<b>218,093</b>	<b>202,772</b>	<b>237,879</b>

## 12.0 STATEMENT OF KEY OBJECTIVES

- A. Undergirding privatization of CAP's operations through effective and efficient operation of the Jamalco joint venture, such that the execution of that role remains entirely free of the national budget with recourse only through collateral

value of the asset and that the country remains in a position to achieve a fair value for the asset on disposition.

- B. Undertaking the activities essential to achieving the goals and objectives of the Joint Venture, and the Government's privatization and economic programmes during the period, including:
1. Seeking to introduce more cost effective fuel alternative at the refinery completing the implementation of a coal fired energy solution by the end of year 2017/18.
  2. Making strategic and tactical use of Alcoa's technical and business methods to ensure that the average cost of producing a tonne of alumina does not exceed the target established for the JAMALCO plant.
  3. Achieving the plant's production targets, while meeting the unit targets set for resources utilized, including fuel, bauxite, caustic soda and other raw materials. The target in tonnes of alumina produced between 2015, 2016 and 2017 is 1.35 million tonnes for Jamalco; CAP's share: 608,000 tonnes.
  4. Effecting the plant's sustaining capital programme within a budget of approximately US\$53 million (CAP's share US\$24M) for 2015 calendar, meeting all related performance objectives.
  5. Completing cost reduction projects at the budgeted costs, in order to contribute to the ongoing efficiency of the plant and bring returns in the areas referred to in the capital programme.
  6. Continue automation of the Company's records retrieval system in the Document Centre to facilitate the efficient and effective fulfilment of the requirements of the Access to Information Act.

### 13.0 CAP'S CAPITAL PROGRAMME SUMMARY

These are the capital costs that will be incurred in the financial year 2015/16. Below are updated projections in relation to capital works in keeping with the latest assumptions.

Project	CAP's Cost (US\$M)
Mining and Lands	\$19,130
(RDA) Residue lake Upgrade	\$ 1,886
Other Sustaining	<u>\$ 3,178</u>
	\$24,194
	=====

The capital works related to residue storage will focus on raising the dyke of an existing lake (#5). The programme in this area continues to pursue a more cost effective method of stacking mud based residue in a manner that will result in significantly more land space and be cost effective.

The following sets out the rationale for the essential projects.

**A. Sustaining Capital**

Sustaining capital works are required to maintain an alumina plant, in order to avoid loss production and productivity. Usually the cost of correcting and avoiding the related problems would significantly outweigh that of doing the project. Sustaining capital is also required to continue operating within minimum standards; including safety and environmental standards.

**B. Residue Lake**

Jamalco embarked on a conversion to the dry-stacking method for disposing of plant residue (substantially mud). This is a more efficient and environmentally friendly approach than the conventional wet ponds. However, the initial outlay required is higher. Dry-stacking uses more space in the short run but, over time, use less space and allow faster reclamation of the land. A storm pond for run-off water storage, essential to the functioning of the system, is being completed and the phasing rationale is being tightly managed.

**D. Mining Infrastructure Development**

Expenditure in mining will be restricted to works essential to gaining access to the required ore, for example haul road construction and land acquisition. Work connected with the migration to the new mining area in North Manchester will be delayed conducted with ample regard for the phasing rationale.



Phillip Paulwell

**Minister**

Science, Technology, Energy and Mining

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MINISTRY PAPER NO. \_\_\_\_\_

**PERFORMANCE OF THE JAMAICA BAUXITE INSTITUTE LIMITED (JBI) FOR  
FINANCIAL YEAR 2014/2015 AND FOCUS FOR FINANCIAL YEAR 2015/2016**

**1.0 PURPOSE OF MINISTRY PAPER**

The purpose of this document is to update Parliament and the public in respect of the performance of the Jamaica Bauxite Institute (JBI) for the Financial Year 2013/2014 and to set out its focus for the Financial Year 2014/2015.

**2.0 MISSION**

The JBI's Mission encompasses an array of closely aligned themes. In particular, the Institute seeks to maximize the returns to the Government and people of Jamaica from investment and production in the bauxite and alumina industry. These returns accrue in the form of levy, taxes, royalty and payments to workers and the implementation of sustainable community outreach projects. The sustainability of these benefits is linked to the industry's international competitiveness. The work of the JBI is focused on enhancing the industry's competitiveness by pursuing aggressive research and development programmes including in the chemical characterization of red mud tailings, effective industry monitoring, harmonious relations and disciplined environmental stewardship.

**3.0 CORE FUNCTIONS**

Following its establishment by the Government of Jamaica (GOJ) in 1975, the JBI has sought to, inter alia:

- Undertake research and development activities on various challenges related to the processing of Jamaican bauxite;
- Continually assess and ensure rationalization in the use of Jamaica's bauxite reserves and (bauxite) lands;
- Monitor and make recommendations to ensure adequate pollution controls and other environmental programmes are in place in the industry; and
- Study and analyse the bauxite, alumina and aluminium industry and provide technical advice on, and personnel for, the negotiation of various agreements.

**4.0 OBJECTIVES**

**4.1 The primary operating objectives of the JBI are to:**

- Embark on a trajectory to gain international accreditation and recognition as a research and development centre in at least one segment of the minerals industry, save and except oil, gas and water.
- Monetise in-house knowledge, promote extensive staff training and nurture a collegial culture.
- Investigate the mineralogy and feasibility of isolating and extracting rare earth elements and other minerals from red mud residue.
- Develop new streams of income, without prejudicing the Institute's regulatory responsibilities.
- Strengthen R&D capabilities in order to position the organisation as a centre of expertise for the sustainable development of industrial mineral resources.
- Fully integrate Succession Planning into the Corporate Planning process.
- Ensure that all auxiliary internal processes consistently perform to international standards.
- Create the institutional anchors that allow for self-sustaining organisational growth, customer satisfaction and internal process renewal on the back of a steady rise in employee productivity.
- Acquire the JBI property.
- Continue to support the sustainable development of communities through Bauxite Community Development Programme (BCDP) interventions largely in the areas of training, micro and small business activity, infrastructure rehabilitation and sustainable agriculture.
- Collaborate with the Ministry of Science, Technology, Energy and Mining (MSTEM), prospective investors and industry stakeholders to plan future expansion and or modernisation of local plant facilities around the use of natural gas and/or coal.
- In instances of plant re-opening and or mothballing, ensure full compliance with all applicable laws, regulations and agreements.
- Locate, protect and allocate a steady stream of bauxite reserves in economically mineable blocks and in alignment with each plant's technical configuration in order to sustain production at the targeted level over a 30 year period.



- Zone and monitor each company's agricultural development programme on pre-mined parcels.
- Vigorously prevent the sterilisation of bauxite reserves that have been hypothecated for future production.
- Diligently use the Productivity Incentive Schemes to further entrench a resource efficiency culture, with a focus on cost, production, customer satisfaction, energy and caustic soda consumption.
- Conduct rigorous analyses of the key drivers of competition in the global bauxite, alumina and aluminium markets.
- Maintain the Secretariat for the Bauxite Sector 1988 Memorandum of Understanding (MOU) that underpins the Productivity Incentive Schemes.
- Assist the Large Taxpayer Office (LTO) with the analysis of Income Tax Returns filed by the bauxite and alumina companies.
- Monitor and ensure payment of the levy, royalty, tax and other statutory deductions.
- Strategically position the organisation to take full advantage of R&D outsourcing opportunities from aluminium and related chemical industry producers.
- Monitor and, where necessary, remediate the environmental footprint resulting from bauxite mining and alumina processing in contiguous communities.
- Develop and continuously review red mud disposal policy and procedures.
- Develop an enforceable compensation policy as a basis for settling environmental complaints emanating from contiguous communities.
- Continue to work with Rio Tinto in de-commissioning the Kirkvine and Mount Rosser mud disposal areas.
- Collaborate with the Mines & Geology Division in ensuring company compliance with the established rehabilitation standards.
- Boost the productivity of mined-out bauxite lands through the application of water-harvesting technology.

4.2 The major strategies pursued for achieving these objectives are as follows:

- ⊙ Effectively advise the GOJ on all industry-related matters from a perspective of sound knowledge and analysis.
- ⊙ Set out on a trajectory to obtaining ISO and JANAAC Certification by 2017.
- ⊙ Leverage and monetise R&D capabilities developed as a direct result of the Rare Earth Elements Pilot Project (REEs PP).
- ⊙ Encourage technical staff to publish in peer-reviewed journals and to file patents in the Institute's name.
- ⊙ Build up materials research and development capabilities, making these available to clients seeking to bring proprietary projects to market.
- ⊙ Reconfigure the Administrative and Procurement systems to adequately support ISO and JANAAC Certification.
- ⊙ Build a customer focus at all occupational levels of the organisation.
- ⊙ Undertake a stream of commercial projects involving the analysis of industrial minerals and other materials.
- ⊙ Consistently conduct Employee Performance Evaluations that are grounded in the newly formulated customer care standards and organisational objectives.
- ⊙ Closely align the Incentive system to measured performance throughout the organisational activity cycle.
- ⊙ Complete the survey of the JBI property and secure approval for ownership by the Land Agency.
- ⊙ Collaborate with the bauxite companies and other community stakeholders to ensure that BCDP interventions help to establish a foundation for sustainable prosperity.
- ⊙ Work closely with the MSTEM to establish the Bauxite Land Management Committee (BLMC) to facilitate the registration, monitoring and protection of bauxite reserves.
- ⊙ Consistently generate Internet-based bauxite and alumina industry information and supply it to domestic and international customers on a subscription basis.

## INDUSTRY OUTFURN AND OUTLOOK

The estimated outturn for Fiscal Year 2014/2015 is for Total Bauxite Production of 9.78 million dry metric tonnes (DMTs), reflecting the continuing closure of the ALPART and Kirkvine refineries. This forecast compares to Total Bauxite Production of roughly 13.5 million Dry Metric Tonnes (DMTs) achieved in FY 2008/2009 just before ALPART and Kirkvine were taken offline. Meanwhile, Gross Earnings for FY 2014/2015 are estimated at US\$661.89 billion, yielding Bauxite Production Levy and Royalty inflows of approximately US\$23.3 million.

With regard to the FY 2015/2016, it is being assumed that the Kirkvine refinery will remain closed whilst bauxite production for export will commence at Alpart in July 2015. Crude bauxite production at Noranda Bauxite Limited (NBL) is projected to reach 5.3 million DMT. Within this context, it is being projected that Total Bauxite Production will increase to 11.37 million tonnes or by 16.3%. Crude bauxite production is expected to reach 6.35 million tonnes and alumina output should climb to 1.95 million tonnes.

It is assumed that bauxite prices will be slightly higher in 2015/2016 than last year while alumina prices will be somewhat lower. With production projected to rise, gross earnings are estimated to climb to US\$750.76 million, an increase of 13.4% and bauxite production levy and royalty to US\$59.6 million, an increase of 156%

### 5.0 ACHIEVEMENTS FOR FINANCIAL YEAR 2013/2014

- Collaborated with Nippon Light Metal Company Limited in completion of pilot plant tests, separation and purification of Rare Earth Elements in the laboratory and activities related to waste disposal.
- The JBI – through its laboratory – assisted in discharging the core function of undertaking research and development with regard to the processing of Jamaican bauxite by analysing three hundred and thirty (330) commercial samples for a miscellany of commercial clients. This compares with sixty-three (63) such samples analysed in the Financial Year 2014/2015.
- In order to better understand the process behaviour of bauxite ores with high concentrations of goethite and associated soluble phosphates, a further one hundred and five (105) routine samples were analysed in relation to the JAMALCO and Noranda mining leases. In the FY 2014/2015, thirty (30) such samples were analysed.
- Work relating to the Mount Rosser Water Monitoring project continued at a rapid pace, with two hundred and twenty-one (221) water samples tested for TDS, pH and ppm sodium during the review period. This represents a 16% increase relative to the one hundred and ninety-one (191) such samples tested in the previous year. Meanwhile, the JBI analysed

sixty-two (62) routine environment water monitoring samples (classified as water verification samples), compared with the thirty-eight (38) such samples analysed in the previous financial year.

- The Institute helped to preserve the industry's sustainability by collaborating with NEPA and the Local Planning Authorities to protect bauxite lands and their reserves from encroachment and sterilization. In particular, four hundred and thirteen (413) sub-division applications were received from the parishes of Clarendon, Manchester, St. Ann, St. Elizabeth and Trelawny - up by 71% from the two hundred and eleven (411) applications received in the FY 2013/2014. Four Hundred and Thirty Eight (238) applications were approved, giving an overall approval rating of 99.5% - an improvement compared to the 95% rating attained the year before.
- The BCDP continued its programme at promoting sustainable economic development in communities in close proximity to bauxite/alumina operations. Against the background of the allocation of \$130 million from the Capital Development Fund (CDF) as the first tranche under Phase VI of the BCDP, the BCDP promoted sustainable economic development in host communities by working closely with the seventeen (17) Joint Bauxite community Councils. During FY 2014/2015, the BCDP disbursed roughly \$78.7 million for implementation of projects mainly in the areas of agriculture, skills training and on community infrastructure development. Since the commencement of Phase VI of the BCDP, 49 projects have been approved for implementation at a cost of approximately \$120 million.
- Under the Bauxite Sector MOU, we reviewed JAMALCO's 2014 Productivity Plan with a focus on achieving genuine productivity improvements in production, cost, energy consumption, customer satisfaction and environmental stewardship. Noranda Bauxite Limited (NBL) is still at the IDT trying to resolve a dispute with the UAWU regarding the proportion by which the productivity payment should be made.

## 6.0 HUMAN RESOURCES

### 6.1 ADMINISTRATION/STAFFING

At the end of the Financial Year 2014/2015 the staff complement stood at sixty (60) - up from fifty-nine (59) a year ago, an addition of one member.

### 6.2 TRAINING AND DEVELOPMENT

In light of the tight budgetary constraints faced during the review year, spending on training and development was deferred.

## 7.0 FINANCIAL PERFORMANCE FOR 2014/2015

### 7.1 BUDGET

As shown in the Table below the JBI's Budget for the Financial Year 2014/2015 was in the amount of J\$205.6 million, comprising Recurrent Expenses of J\$190.55 million and Capital Expenditure of J\$15.05 million. Against this background, the Projected Actual Total Budget outturn to March 31, 2014 was J\$201.49 million, disaggregated into Recurrent Expenses of J\$186.44 million and Capital Expenditure of J\$15.05 million.

OBJECT OF EXPENDITURE	PROJECTED ACTUAL J\$M	BUDGET J\$M
Capital Expenditure	15.05	15.05
Recurrent Expenses	186.44	190.55
<b>TOTAL</b>	<b>201.49</b>	<b>205.60</b>

## 8.0 FOCUS FOR THE 2015/2016 FINANCIAL YEAR

Lower global oil prices and monetary policy 'easing' are expected to be supportive of growth in the world's major economies in 2015. However, these positive developments are expected to be offset in part by a number of other major developments, including generally weak global private investment in many advanced and emerging market economies. Amid these expectations, the International Monetary Fund (IMF) has expressed that the world economy will attain growth of 3.5% in 2015 relative to an earlier forecast of 3.8%. For 2016, global growth is expected to accelerate to 3.7%, supported largely by activities in India.

Revised projections for 2015 from the IMF in January indicated that the United States will grow by 3.6% relative to the 3.1% previously projected amid more robust growth in domestic demand, inferred from an improved employment outlook. However, growth projections for China and the euro area were revised downward by 0.3% and 0.1%, respectively, to settle at 6.8% and 1.2%. Lower projected growth for the euro area was motivated by weaker private and public investment prospects despite lower oil prices and further monetary policy easing while China's revision occurred in the context of a number of leading indicators pointing to a slowdown in private investments, particularly in the housing and construction sectors.

The global aluminum market in 2015 is expected to record a surplus of 473 000 tonnes as global production is projected to increase by 6.0% relative to an expected increase of 5.1% in global aluminum demand. This surplus would represent a deviation from the results of 2014, in which year a global market deficit of 13 000 tonnes was registered.

Due to the strong growth forecast for the US in 2015, demand for primary aluminum in the US is expected to surpass the 5.0% growth recorded in 2014 in light of increased activities particularly within the transportation and housing sectors. In contrast, primary aluminium demand in Europe is expected to contract due primarily to weak growth in transportation and construction-related activities in the euro area. Furthermore, the situation is expected to be exacerbated by tightening emission regulations and a general weakening of consumer buying interest due to economic uncertainty.

## 8.1 STATEMENT OF OPERATIONAL ACTIVITIES

The Institute's operational objectives include, *inter alia*:

- Develop appropriate fiscal regime structures, present credible forecasts and market analyses and maintain a comprehensive national minerals database that reflects either the JORC or some other internationally-accepted standard.
- Reconfigure all mission critical technical and human capabilities to conform to the requirements of ISO and JANAAC Certification.
- Build, test and implement an efficient R&D Management Information System.
- Evaluate the existing materials science literature on red mud tailings with a view to further enhancing their commercial value.
- Complete preparation of Succession Plan and organizational review to ensure that all strategic posts are suitably filled.
- Leverage technical and analytical capabilities to create self-sustaining income streams.
- Protect reserve lands and preserve the sector's sustainability through the adoption of sequential land use planning, while intensifying research efforts into the economic uses of mined-out lands.
- Allocate incremental bauxite reserves in support of company plans to retrofit powerhouses and boilers to burn natural gas and/or coal.
- Upgrade the laboratory and begin a phased retooling of the alumina Pilot Plant with a view to developing a new earnings stream from R&D work on various challenges relating to the processing of Jamaican bauxite.
- Maintain the Secretariat for the Bauxite Sector MOU and diligently use each company's Productivity Plan as a vehicle for further entrenching a productivity culture in the areas of production, energy and raw materials consumption, cost, customer satisfaction and environmental stewardship.
- Efficiently allocate Bauxite Community Development Programme (BCDP) resources to projects that form part of each community's approved sustainable development plan.

- Ensure the timely publication of the JBI's Annual Report and Financial Statements, Corporate and Operational Plans and accompanying Ministry Papers.

## 8.2 NEW PROJECTS

- Prepare a Strategic and Financial Plan setting out the potential administrative costs as well as the regulatory, R&D and commercial benefits that could accrue from transitioning to a National Minerals Institute with Executive Agency status.
- Develop a research programme for the utilization of the newly-constructed REEs Pilot Plant.
- Work with WINDALCO on technical solutions to process bauxite more efficiently, while improving energy and caustic efficiency.
- Work to better understand the processes and market for chemical grade alumina as a fall-back position in the event that it is deemed uneconomical to continue producing metal grade alumina at Kirkvine.
- Redouble R&D efforts involving the mineralogy and chemistry of Jamaican bauxites that have high goethite and soluble phosphorus levels.
- Upgrade the JBI's laboratory and alumina Pilot Plant and commence the process of obtaining ISO certification and JANAAC accreditation.
- Establish environmental boundaries around bauxite and alumina operations and develop an industry compensation policy as a basis for resolving complaints from host communities.

## 8.3 AUDIT AND PUBLIC RELATIONS

There has been on-going internal auditing of the JBI's records and activities. Meanwhile, PriceWaterhouseCoopers is about to begin work on the External Audit for the Financial Year 2013/2014.



Phillip Paulwell

**Minister**

Ministry of Science, Technology, Energy and Mining

April 13, 2015

MINISTRY PAPER NO. \_\_\_\_\_

## PERFORMANCE OF THE JAMAICA BAUXITE MINING LIMITED (JBM) FOR FINANCIAL YEAR 2014/2015 AND FOCUS FOR FINANCIAL YEAR 2015/2016

### INTRODUCTION

Jamaica Bauxite Mining Limited (JBM) was incorporated in 1975 to administer the Government's equity in the bauxite/alumina industry. It holds a fifty one percent (51%) equity stake in Noranda Jamaica Bauxite Partners. The JBM does not get involved directly in operations in the respective entities in which it has equity on behalf of Government of Jamaica (GOJ).

JBM also owned seven percent (7%) in Windalco up to June 30, 2014 and one hundred percent (100%) of the former Reynolds Operations at Lydford and the port in Ocho Rios.

The company has three distinct sources of revenue:

- a) Sales of alumina from Windalco
- b) Asset usage fee from Noranda Jamaica Bauxite Partners
- c) Revenue from its Lydford and Ocho Rios assets by way of Shipping and handling fees from the port, for sugar, cruise ships and limestone as well as rental of property.

In normal operations bauxite and alumina sales and revenue streams contributed approximately 80% to JBM revenue each year. With the continued closure of Windalco, Kirkvine and the sale of the equity after three months into the financial year, JBM's principal source of revenue, the sales of alumina, was reduced.

JBM's executive has adopted a strategy aimed at further diversification so as to increase revenues attributable to port operations and property operations. Principal among the initiatives is to substantially increase the throughput of limestone.

### 1.0 PURPOSE

The purpose of this document is to update Parliament and the general public in respect of the performance of JBM for the financial year 2014/2015 and its focus for the 2015/2016 financial year.

### 2.0 MISSION

To optimize the returns on Government of Jamaica (GOJ) sector investment, while promoting sector expansion and development in a manner that is not injurious to the environment.



### 3.0 OBJECTIVES

Jamaica Bauxite Mining Ltd. endeavours to:

- Ensure that business processes at Noranda Jamaica Bauxite Partners (NJBP) and the former Reynolds operations at Lydford and Ocho Rios deliver the level of cost savings, productivity improvement and economic value added necessary to maximize the overall returns on GOJ's sector investment.
- To complete all transactions necessary to transfer JBM 7% in Windalco to Rusal.
- Utilize its joint venture member Leverage membership on the Executive Committee of Windalco to have Rusal invest in energy solution for Ewarton.
- Leverage membership on the Executive Committee of joint venture partners to ensure they are NPV positive and therefore able to invest in plant development and expansion.
- Meet JBM's financial commitment to Windalco and Glencore
- Ensure that JBM's port in Ocho Rios remains multi-purpose and in good condition.
- Substantially increase the revenue from limestone and sugar shipments at the Ocho Rios port.
- Work towards establishing an industrial park in the former Reynolds plant area by leasing offices, workshops and houses

### 4.0 CORE FUNCTIONS

- Make quality, productivity, cost efficiency, reliability and environmental consciousness the key drivers of value creation in joint ventures guides our interaction with the company at executive meetings. Furthermore, these key drivers guide our interaction with Noranda Jamaica Bauxite Partners as well as other ventures undertaken with JBM.
- Encourage joint venture partners to institute and enforce sanctions for non-conformance with ISO environmental standards. Adherence to standards improves the standing of Jamaica's product on the world market as it ensures that quality can be trusted and any variations measured and accounted for. This gives our assets more value and enhances JBM's worldwide reputation.
- Conclude the process of divesting JBM's 7 % equity in Windalco.
- The economic rationale and attractiveness of maintaining the port in Ocho Rios as a multi-purpose port is clear to JBM. As the only sugar-exporting port on the island, it already serves a key multi-function purpose. Moreover, JBM has been working with the Lydford Mining Company with a view to expanding limestone shipments from the port, thereby improving the company's throughput and efficiency. JBM believes that as this multi-use high volume industrial port already exists with the required basic infrastructure; its multi-use status must be preserved.
- Monitor properties leased to tenants in Lydford and Ocho Rios including houses and lands leased to CHEC.

- Complete the arrangements with the NWC and other interest groups with the view of resuscitating the water supply system. This would enable the expansion of the supply to communities in close proximity. These renovations will be time consuming and expensive but should be completed by the end of the fiscal year in 2015/16
- Track economic value added per metric tonne of sugar and limestone shipped as well as per cruise vessel serviced to ensure continued viability of the port facilities.
- Encourage cruise ship beneficiaries to increase their contribution to the upkeep of the port. Major repairs are to be done to the infrastructure of the port.
- Continue study with possible joint venture partner to redevelop the port in Ocho Rios with the best potential outcome being the expansion of the port into a true multi-use facility with all parts operating efficiently, effortlessly and economically. JBM wants the port to recognize both the development of the tourist product, and the development of the industrial sector.

Despite the upheaval caused by the global economic crisis, JBM has performed credibly through significant improvements at its Lydford Operations and will be profitable overall following the divestment of the Windalco equity.

#### 5.0 ACHIEVEMENTS FOR 2014/2015

- For the year in review JBM has sold 17,099 tonnes of alumina received from its 7% share of the production at Ewarton. This resulted in revenue of US\$4.79 million (J\$554Million) which went towards reducing the debt to Windalco.
- Attended Executive Committee meetings of partners (Windalco and Noranda Jamaica Bauxite Partners). Operational, environmental and government relations are typical agenda items.
- Maintained and conducted major renovations to houses at Lydford which are listed among the assets.
- Completed renovation of factory space and offices at Lydford for lease to a company that manufactures Transformers and the Browns Town Community College.
- Maintained sugar storage and conveyor systems. All of the island's sugar is exported from the Port in Ocho Rios; as such maintenance must be carried out routinely to ensure that all systems operate efficiently whenever sugar vessels are ready to be loaded. Otherwise breakdowns could result in heavy demurrage charges.
- Collected rent for several properties, including those in Lydford and Puerto Seco. This contributed J\$18.9 million in revenue for the fiscal year to January 2015 and an additional J\$9.5 million was earned in February from lands leased to China Harbour, therefore a grand total of J\$28.4.

- Unloaded sugar from trucks; stored and loaded sugar onto ships. Fees from storage and handling sugar amounted to J\$63.8 million for the fiscal year to January 2015. Handling and shipping of sugar earns the most revenue of any operation undertaken by JBM Lydford operations and serves to cover much of the company's overheads. Sugar is budgeted to earn J\$105 million for the year and should do so before the end of March as one shipment was done in early March with revenue of J\$34 million and another will be in late March.
- Revenue for accommodating cruise ships, and dry docking was J\$17.5 million to January and should exceed the budget of J\$22 million
- The total revenue earned to date from fees related to limestone shipping amounted to J\$47.3 million with budgeted amount of J\$64 million for the year. \$20 million are to be earned from three shipments in February and March.
- Rented lands to China Harbour earning revenue of approximately J\$23.3 million per year.
- Writing off of JBM debts to the Bauxite and Alumina Trading Company Limited.

#### 5.1 REVENUE & EXPENDITURE 2014/2015

- For the fiscal year 2014/15 to January 2015, JBM's Lydford/Port operations made a profit of \$5.5 million but will show significantly more profit as the first quarter in the calendar year is normally the most active period when sugar, limestone and cruise ships cluster.
- Overall gross revenue for JBM to January 31, 2015 was J\$1.5 billion and loss was approximately \$609 million because of production cost at Windalco and penalty to Glencore.
- The cumulative loss would have been significantly higher if JBM was supplying the contract at the lower contracted price instead of selling the alumina to Rusal. On the tonnes sold to RUSAL, JBM made US\$21 million over and above what it would have received had it sold the alumina under the supply contract with Glencore.

#### 6.0 FOCUS FOR 2015/2016 FINANCIAL YEAR

- Continue maintenance of the company's houses and collection of related rent.
- Perform strategic maintenance to port including: cathodic protection, pilings, closed circuit television and improvements to conveyor belts including partnering with Lydford Mining Company to overall portion of the overhead conveyor.
- Complete the transfer of assets to be sold to Rusal.
- Receive, store and load all sugar shipments leaving Jamaica.
- Maintain sugar silos and conveyor systems. Continue redesign of sugar receipt and loading system to reduce truck unloading and ship loading time.
- Conduct major maintenance of port infrastructure such as replacement of piles.
- Receive, store and load limestone ships.

- Continue the restructuring of the organizational structure of the company to accommodate new posts and upgrade the present ones. This is an exercise that should have been completed from 2008 but now becomes urgent as BATCO has been wound-up.
- Attend Executive Committee meetings of Noranda Jamaica Bauxite partners.
- Continue work on the resuscitation of water supply system with the aid of other interest groups.
- Pursue the increase in shipment of limestone to enhance revenue by 100%.
- Continue decoration of the port to enhance aesthetics to fit in with the tourism product.

#### **6.1 Budgeted Revenue and Expenditure for financial year 2015/2016**

JBM is funded solely from its revenue. The company should maintain its profit position estimated at \$47 million even though it might have to expend much capital to repair the port and the servicing of debts to Glencore. This debt will be substantially reduced in the year.



Phillip Paulwell  
**Minister**

Science, Technology, Energy and Mining  
April 13, 2015

MINISTRY PAPER NO: \_\_\_\_\_

## PERFORMANCE OF THE SEISMIC (EARTHQUAKE) RESEARCH UNIT FOR FINANCIAL YEAR 2014/2015 AND FOCUS FOR 2015/2016

### 1.0 MISSION STATEMENT

Through operating the Jamaica Seismograph Network and affiliation with other Caribbean and regional networks, the Earthquake Unit seeks to understand earthquake processes in and around Jamaica, and advise society about earthquake hazards, thereby encouraging earthquake awareness and the application of mitigating strategies for development.

### 2.0 THE EARTHQUAKE UNIT

The Earthquake Unit (EQU) is a research unit of the University of the West Indies that is funded directly by the Government of Jamaica (GOJ) as the sole agency responsible for the monitoring of earthquakes and research in seismic hazards in Jamaica. The EQU continues to focus on improving the seismic network across Jamaica by increasing the number of broadband seismographs. The support of \$26.763 million was received for the financial year 2014-2015 and put the EQU in a position to acquire a fourth broadband seismograph. The acquisition of this additional unit meets the minimum required number of units needed for a digital broadband seismograph network in Jamaica. This additional equipment will contribute to improving the data quality that can lead to improvement in the seismic codes being used in the proposed national building code.

For the period April 2014 to March 2015, the Jamaica Seismograph Network (JSN) performed at a satisfactory level. There were the usual problems of the long delays of processing orders for purchase of equipment and parts needed which affected timeline and set targets. At the end of this period we had three of the four digital broadband stations (STHB, YHJB and MTDJ) working in our network. Montego Bay (MBJ) went down due to damage to the station from a lightning strike, and there was a lengthy delay in restoring service as a result of not having the necessary spares and waiting on the bursary to make payment. The twelve (12) analog short period seismograph stations worked at an acceptable level for most of this period with minor adjustments needed to improve on the signals from the western end of the island. We also continued to share data from the digital broadband stations with the Incorporated Research Institution for Seismology (IRIS). There were delays in establishing the new broadband station at Castle Mountain due to the National Land Agency's (NLA) slow process of completing their processing to grant approval to proceed with the installation at the site. In the mean time we have made arrangements with the Police to assist with transmitting the data to Kingston on their data network once we complete the installation.

There was an expansion of the Jamaica Strong Motion Network (JSMN) with the installation of three new stations bringing the total number of seismographs up to seventeen (17). The new stations were at the Office of Disaster Preparedness and Emergency Management (ODPEM), Portmore Community College (PCC), and the Kingston Public Hospital (KPH). We have data from the station at the ODPEM coming into the Earthquake Unit's Central Recording Station in real-time but the other two sites are not transmitted in real-time as we do not have the radio equipment needed to transfer the data to the Earthquake Unit. We also completed the housing for stations that were part of the Caribbean Catastrophe Risk Insurance Facility (CCRIF) project at the Kingston Container Terminal (KCT) and the Long Mountain Country Club (LMCC). The Kingston Container Terminal (KCT) installation was completed and the station worked fine for all of this period with the data transmitted to the Earthquake Unit in real-time. The accelerograph for the station on Long Mountain (LMCC) was sent back to the factory for repairs and at the end of this period the repairs had not been completed.

We also continued to maintain the accelerograph installed at the Norman Manley International Airport (NMIA) and at TransJamaica Highway Limited. There are two accelerographs installed at each location with one unit installed as a free-field station and the other installed on the control tower for NMIA and a free-field station at the Portmore Toll Plaza and the second unit on the Portmore Toll Bridge for TransJamaica Highway. There is also a Kinematics ETNA accelerograph installed at SMADA Consultants in Half Way Tree at the SMADA office that continued to operate.

We had all the other Accelerograph Stations working for most of this period; these include the stations at Old Harbour JPS Power Plant, Munro College seismograph station, Castle Mountain seismograph station, Stony Hill Seismograph Station, Mount Denham Seismograph Station and the UWI Mona Station (Figure 1).

We continued to operate the JSN without all the spare equipment needed and hence significant amounts of time were spent in the laboratory undertaking repairs, in some instances from using recycled parts. Equipment that was repaired and tuned included UHF and VHF transmitters, UHF and VHF receivers, discriminators, seismic amplifier and voltage control oscillators, radio frequency amplifiers and power supplies. We ensured that the seismic stations that malfunctioned were repaired in a reasonable time. The solar system at the Central Recording Station at the Earthquake Unit continued to perform at the desired level with adequate maintenance. It was also recommended that we upgrade the CRS solar system once funding becomes available.

We had a busy lightning season from May to the end of November but we did not have much lightning damage to our equipment as measures were put in place to minimize the damage from such strikes.

For this period the EQU acquired GPS data from the National Land Agency (NLA) for all their stations to use in our ongoing research. The EQU continues to collaborate with the University of Wisconsin by working with Professor Chuck DeMets to process the GPS data for use in ongoing research work. We also have access to the data from the three UNAVCO GPS stations at Morant Cays, Pedro Bank and at the University of the West Indies. We also operate one GPS Continuous Station with a Trimble NETRS receiver at Pike in Manchester where data were downloaded and uploaded for processing. No temporary GPS installations were done during this reporting period. Engineers from UNAVCO visited in September, 2014, to check on the unit at the UWI.

The Earthquake Unit continued to operate the Jamaica National Data Center (NDC\_JM) for the Comprehensive Nuclear Test Ban Treaty Organization (CTBTO). There were no major issues with the CTBTO equipment this year and the unit was able to do the necessary routine maintenance needed on the equipment. Earthquake Unit staff members continued to have access to all the CTBTO data.

The USGS-GSN station at Pike in Manchester had work undertaken on the station in October, 2014, to upgrade and to facilitate migrating from one telecommunication satellite provider to another. Two Engineers from the USGS visited in October to install equipment and to re-align the satellite for optimal performance. Earlier in the period we assisted in working with Spectrum Management in securing the VSAT license needed for the upgrade. I also visited the station (MTDJ) a few times to do routine maintenance and to sort out issues that came up during the year.

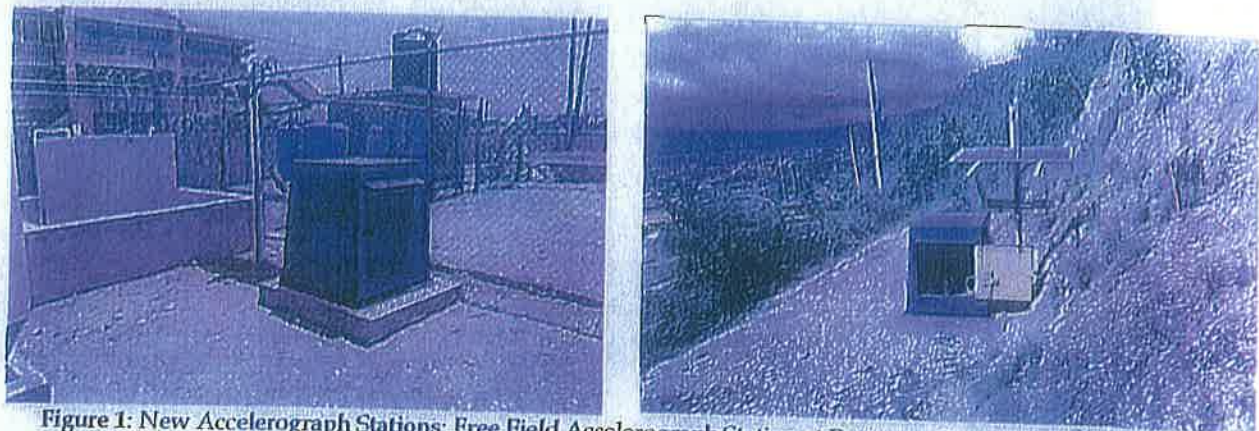


Figure 1: New Accelerograph Stations: Free Field Accelerograph Station at Portmore Community College, and Accelerograph Station installed on Long Mountain.

The EQU continues to seek additional collaborative possibilities. Recently, through the ODPEM, the EQU has been involved with JICA (Japan International Cooperation Agency) and a Chile-Spain Cooperative Agreement in trying to source additional funding and technical support. Also in the 2014-2015 reporting period, the EQU has been working with ODPEM and the PIOJ in a proposal to the World Bank to increase

the number of broadband stations and strong motion seismographs across the island. Funding from this project is hoped to be available in the 2015-2016 reporting year.

The EQU still faces significant challenges. We still operate without the necessary spare equipment and parts needed to ensure a smooth operation and hence long hour in the laboratory and in the field are necessary to keep the stations operating. Lightning strikes during the hurricane season (May to November) are a particular concern as stations may go down and there is a significant time lag to facilitate repair and reinstallation. There is still the challenge of the length of time it takes for the university to process orders and some local companies have stopped accepting UWI purchase orders.

### 3.0 EARTHQUAKES RECORDED

The JSN recorded (Table 1) and processed one hundred and ninety seven (197) events, thirteen of which were determined to be blasting (explosion) events. Of the remaining one hundred and eighty four (184) earthquakes during this period (April 2014 - March 2015), only sixty nine (69) were local events. There were only two (2) felt events, one in May, 2014, and one in December, 2014.

**Table 1:** Events recorded from April 2014 to March 2015 by the Central Recording Station at the EQU, of these only 69 were local events with only 2 of these recorded events being felt.

Year	Month	Recorded Events			Type of Events							
		Total	Local	Non-Local	Local	Non-Local	Non-Local	Non-Local	Non-Local	Non-Local	Non-Local	Non-Local
2014	Apr	8	3	11	8	3	10	0	0	21	0	
2014	May	5	1	6	5	1	9	0	2	17	1	
2014	Jun	8	5	13	8	5	7	0	2	22	0	
2014	Jul	7	2	9	7	2	4	0	2	15	0	
2014	Aug	5	0	5	5	0	3	0	1	9	0	
2014	Sep	5	7	12	5	7	5	0	1	18	0	
2014	Oct	7	6	13	7	6	12	0	0	25	0	
2014	Nov	2	5	7	2	5	5	0	2	14	0	
2015	Dec	5	4	9	5	4	7	0	0	16	1	
2015	Jan	8	6	14	8	6	5	0	1	20	0	
2015	Feb	8	2	10	8	2	7	0	2	19	0	
2015	Mar	1	0	1	1	0	0	0	0	1	0	
ALL	Totals	69	41	110	69	41	74	0	13	197	2	

Earthquake activity in the Jamaican region for the April 2014 - March 2015 reporting period was concentrated in five areas (Table 2; Figure 2). The main concentration of earthquakes (27) occurred in south-western Portland (and adjoining contiguous areas), historically the main area for earthquakes in Jamaica, and a few earthquakes also occurred in north-eastern Portland and central St. Thomas. Four earthquakes were recorded in central St. Catherine (along the course of the Cavaliers Fault), and four on

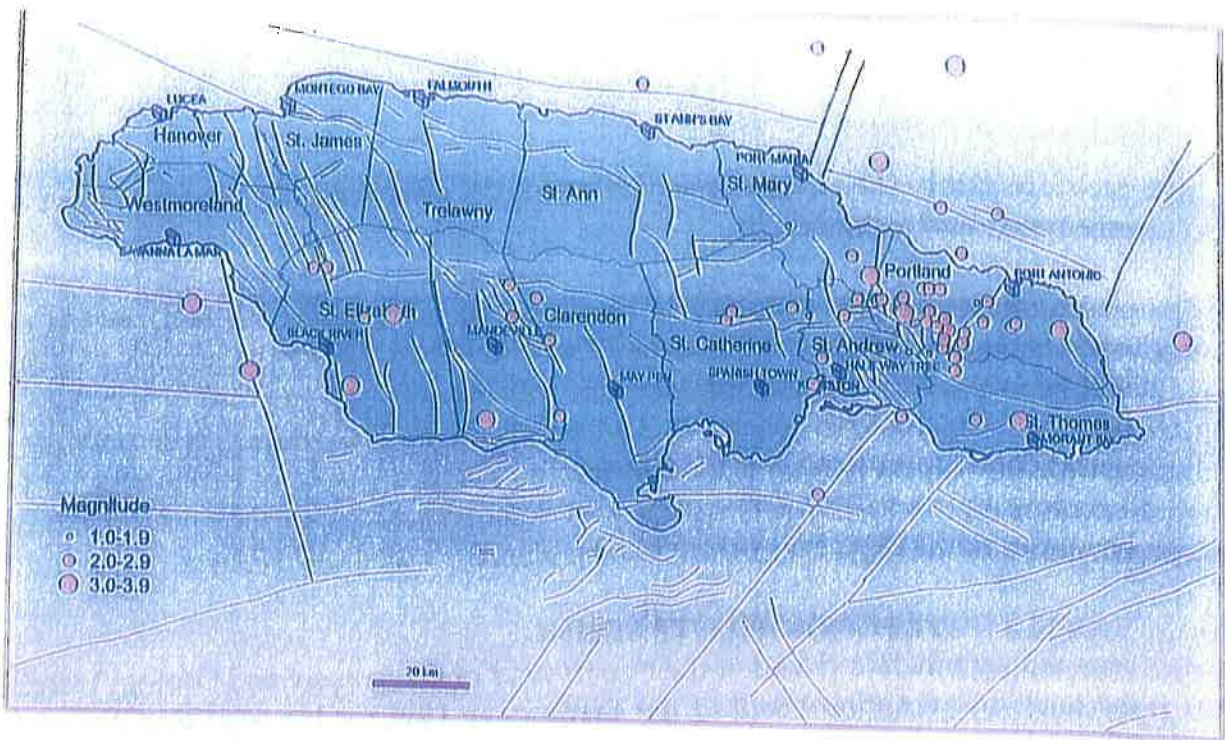


the boundary of the parishes of Clarendon and Manchester (along the Mile Gully Fault Zone). Five earthquakes were recorded in St. Elizabeth and a further two offshore to the west of St. Elizabeth.

**Table 2:** List of local earthquakes for the period April 2014-March 2015.

Date	Origin time	Lat.(°N)	Long.(°W)	Depth	Mag.(M)	Local Region Sub-areas	Parish	Number	Felt
10/07/2014	1302 54.0	17.977	-77.988	42.8	3.0	Black River	Orishore	17	No
01/19/2015	456 45.1	17.953	-77.785	21.0	3.3	Black River	St Elizabeth	17	No
06/27/2014	1708 45.4	18.136	-76.686	16.0	1.6	Blue Mountains Block	Portland	16	No
07/23/2014	0038 33.7	18.136	-76.530	15.0	1.7	Blue Mountains Block	Portland	16	No
08/06/2014	1455 16.9	18.154	-76.698	11.2	1.8	Blue Mountains Block	Portland	16	No
02/21/2015	0 3 48.2	18.097	-76.651	14.8	1.8	Blue Mountains Block	Portland	16	No
03/01/2015	1230 8.9	18.093	-76.668	16.5	1.8	Blue Mountains Block	Portland	16	No
04/22/2014	0729 20.1	18.159	-76.639	16.3	2.1	Blue Mountains Block	Portland	16	No
06/19/2014	0248 58.6	18.035	-76.674	11.2	2.1	Blue Mountains Block	Portland	16	No
07/13/2014	0135 8.5	18.118	-76.625	11.2	2.1	Blue Mountains Block	Portland	16	No
08/09/2014	1825 49.3	18.089	-76.610	8.1	2.1	Blue Mountains Block	Portland	16	No
12/05/2014	0356 13.9	18.084	-76.686	24.5	2.1	Blue Mountains Block	Portland	16	No
02/16/2015	747 0.9	18.051	-76.598	1.8	2.1	Blue Mountains Block	Portland	16	No
06/04/2014	0727 39.0	18.118	-76.686	9.2	2.2	Blue Mountains Block	Portland	16	No
06/21/2014	0548 57.4	18.136	-76.729	23.6	2.2	Blue Mountains Block	Portland	16	No
01/11/2015	20 9 7.7	18.080	-76.656	1.4	2.3	Blue Mountains Block	Portland	16	No
04/10/2014	1405 58.1	18.133	-76.684	16.3	2.4	Blue Mountains Block	Portland	16	No
02/08/2015	836 16.5	18.169	-76.625	2.6	2.4	Blue Mountains Block	Portland	16	No
06/31/2014	1659 14.7	18.097	-76.631	15.1	2.5	Blue Mountains Block	Portland	16	No
01/10/2015	020 28.7	18.137	-76.720	14.6	2.5	Blue Mountains Block	Portland	16	No
02/16/2015	1452 43.9	18.158	-76.604	1.5	2.5	Blue Mountains Block	Portland	16	No
07/26/2014	0710 17.2	18.111	-76.674	5.9	2.8	Blue Mountains Block	Portland	16	No
09/21/2014	0953 40.9	18.066	-76.696	15.3	2.8	Blue Mountains Block	Portland	16	No
02/08/2015	1513 17.2	18.105	-76.594	29.4	2.8	Blue Mountains Block	St Thomas	16	No
10/12/2014	1949 42.8	18.060	-76.558	0.0	2.9	Blue Mountains Block	Portland	16	No
02/22/2015	2049 53.1	18.142	-76.678	8.0	2.9	Blue Mountains Block	Portland	16	No
05/12/2014	0144 21.0	18.113	-76.675	1.1	3.3	Blue Mountains Block	Portland	16	No
06/22/2014	0107 18.7	18.226	-76.662	0.0	2.5	Blue Mountains Block	Portland	16	Yes
09/09/2014	1631 16.3	18.267	-76.905	18.7	1.6	Guys Hill	Orishore	12	No
04/16/2014	1324 15.5	17.979	-76.856	0.0	2.3	Kingston	Kingston	10	No
01/24/2015	1344 38.8	18.027	-76.838	11.0	2.6	Kingston	Kingston	21	No
06/06/2014	1043 33.8	18.078	-77.769	18.7	2.7	Montpelier-Newmarket Belt	Kingston	21	No
05/03/2014	0712 8.5	18.170	-77.837	19.5	2.8	Montpelier-Newmarket Belt	St Elizabeth	7	No
02/28/2015	1524 10.4	18.168	-77.865	23.5	2.9	Montpelier-Newmarket Belt	St Elizabeth	7	No
04/11/2014	1659 34.9	18.085	-77.700	11.9	3.0	Montpelier-Newmarket Belt	St Elizabeth	7	No
04/14/2014	1927 55.1	17.777	-76.844	15.0	2.1	Morant Basin	St Mary	7	No
09/08/2014	1021 30.8	18.089	-76.104	14.0	3.1	New Bank Fracture Zone	Orishore	26	No
08/23/2014	0844 59.6	18.591	-76.851	9.8	2.8	Ocho Rios	Orishore	14	No
10/12/2014	1558 59.9	18.617	-77.206	2.6	2.9	Ocho Rios	Orishore	4	No
11/14/2014	0332 12.7	18.308	-76.604	8.3	2.6	Orishore St Mary	Orishore	4	No
07/31/2014	1457 29.6	18.565	-76.577	4.0	3.1	Orishore St Mary	St Mary	5	No
12/06/2014	1633 38.8	18.388	-76.727	17.4	3.1	Orishore St Mary	Orishore	5	No
10/13/2014	0408 38.9	18.093	-76.450	21.6	2.3	Port Antonio	Orishore	5	No
08/18/2014	0710 13.0	18.100	-76.451	3.7	2.5	Port Antonio	Portland	13	No
07/29/2014	1530 7.6	18.139	-76.509	13.6	2.6	Port Antonio	Portland	13	No
10/08/2014	0928 40.7	18.299	-76.490	1.3	2.7	Port Antonio	Portland	13	No
05/10/2014	1828 52.3	18.101	-76.517	15.0	2.8	Port Antonio	Orishore	13	No
01/21/2015	1828 55.3	18.078	-76.103	0.0	3.1	Port Antonio	Portland	13	No
12/05/2014	1120 35.6	18.089	-76.363	3.9	3.5	Port Antonio	Orishore	13	No
10/11/2014	1520 16.5	18.104	-76.884	16.5	1.8	Rio Minho-Crawle River Fault Zone	Portland	13	Yes
07/12/2014	0438 8.9	18.118	-76.808	13.2	2.0	Rio Minho-Crawle River Fault Zone	St Catherine	15	No
02/03/2015	953 36.7	18.092	-77.031	15.2	2.0	Rio Minho-Crawle River Fault Zone	St Catherine	15	No
01/03/2015	1626 11.4	18.087	-77.462	8.1	2.3	Rio Minho-Crawle River Fault Zone	St Catherine	15	No
06/30/2014	0654 6.6	18.122	-77.415	28.7	2.4	Rio Minho-Crawle River Fault Zone	Manchester	15	No
01/02/2015	10 7 20.9	18.046	-77.387	6.8	2.5	Rio Minho-Crawle River Fault Zone	Clarendon	15	No
04/23/2014	1016 9.2	18.145	-77.400	31.1	2.6	Rio Minho-Crawle River Fault Zone	Clarendon	15	No
01/22/2015	940 35.4	18.108	-77.020	5.8	2.7	Rio Minho-Crawle River Fault Zone	Manchester	15	No
12/25/2014	1634 16.8	17.907	-77.308	8.7	2.5	Rio Minho-Crawle River Fault Zone	St Catherine	15	No
09/21/2014	1150 54.4	17.807	-77.542	14.0	3.0	Spur Tree Fault Zone	Manchester	18	No
06/02/2014	0723 25.7	18.105	-76.794	17.9	2.1	Wegwater Trough North	St Elizabeth	18	No
04/23/2014	0248 6.1	18.235	-76.779	20.6	2.3	Wegwater Trough North	St Andrew	11	No
06/02/2014	2342 43.8	18.186	-76.708	12.4	2.7	Wegwater Trough North	St Mary	11	No
07/27/2014	0673 29.0	18.179	-76.743	12.7	3.0	Wegwater Trough North	St Andrew	11	No
11/14/2014	2343 51.4	18.042	-76.060	18.2	1.8	Wegwater Trough South	St Mary	11	No
09/27/2014	2334 31.4	18.070	-76.574	1.9	2.3	Wegwater Trough South	St Andrew	22	No
09/05/2014	022 3 33.9	17.923	-76.681	19.8	2.4	Wegwater Trough South	St Thomas	22	No
12/21/2014	0 0 09 47.3	17.921	-76.474	12.5	3.4	Yallahs-Plantain Garden Fault Zone	St Thomas	23	No
04/03/2014	0005 10.1	18.028	-76.625	10.0	1.8	Yallahs-Plantain Garden Fault Zone	St Andrew	23	No
10/25/2014	2323 23.5	17.921	-76.532	14.4	2.5	Yallahs-Plantain Garden Fault Zone	St Thomas	23	No

Figure 2: Earthquakes in the Jamaican region for the period of April 2014 to March 2015.



#### 4.0 WORK OF THE EARTHQUAKE UNIT

##### 4.1 PROJECTS

- *Upgrading Seismic Networks*

The EQU is continually upgrading its seismic network including adding new accelerographs and improving its communication abilities. Several new accelerographs were installed during the year as detailed above.

- *Global Positioning System (GPS) Network Continuously Operating Caribbean GPS Observational Network (COCONet) and the network of GPS Fault delineation project in collaboration with the University of Wisconsin at Madison.*

The EQU continues to work with the University Consortium (UNAVCO) in the COCONet Project to examine Caribbean Plate motion and activity along major faults in the region. This includes GPS data collection and station maintenance.

- *CTBTO (Comprehensive Nuclear Test Ban Treaty Organisation) National Data Centre (NDC) activities.*

The EQU operates the National Data Centre (NDC) at the Central Recording Station (CRS), Mona. The Earthquake Unit is linked to the International Data Centre (IDC) in Vienna and has access to the data from the CTBTO's International Monitoring System. Several members of staff were involved in CTBTO training sessions during the year.

##### 4.2 COMMUNITY OUTREACH/INITIATIVES

Twenty four primary and high schools visited the EQU, consisting of a total of 1000 students and 60 teachers. There were other visits (60 students and 7 staff members) from the UWI and other university campuses. Members of staff of the EQU also visited a number of community organizations, colleges and expos to educate the public in an

effort to fulfil the Unit's mandate towards educating the society about seismic occurrence and vulnerability.

The updating of the website has been put on hold while the EQU awaits the new website template from the University Campus. Once the template is received, the EQU will be to provide a portal for everyone interested in Jamaica and its seismicity where they can acquire accurate up-to-date information. The website will provide general information about earthquakes, information about the risks of earthquakes in Jamaica, how to prepare for an earthquake, and resources about earthquakes in Jamaica. The inventory of the EQU library will also be placed on the EQU Website.

#### 4.3 STAFF PROFILE/TRAINING

Prof. Simon Mitchell (Head of the Department of Geography and Geology) continued in the position of Acting Head of the Earthquake Unit for the reporting period. Despite advertising the position, no suitable candidate was found who would accept the remuneration currently available for the position.

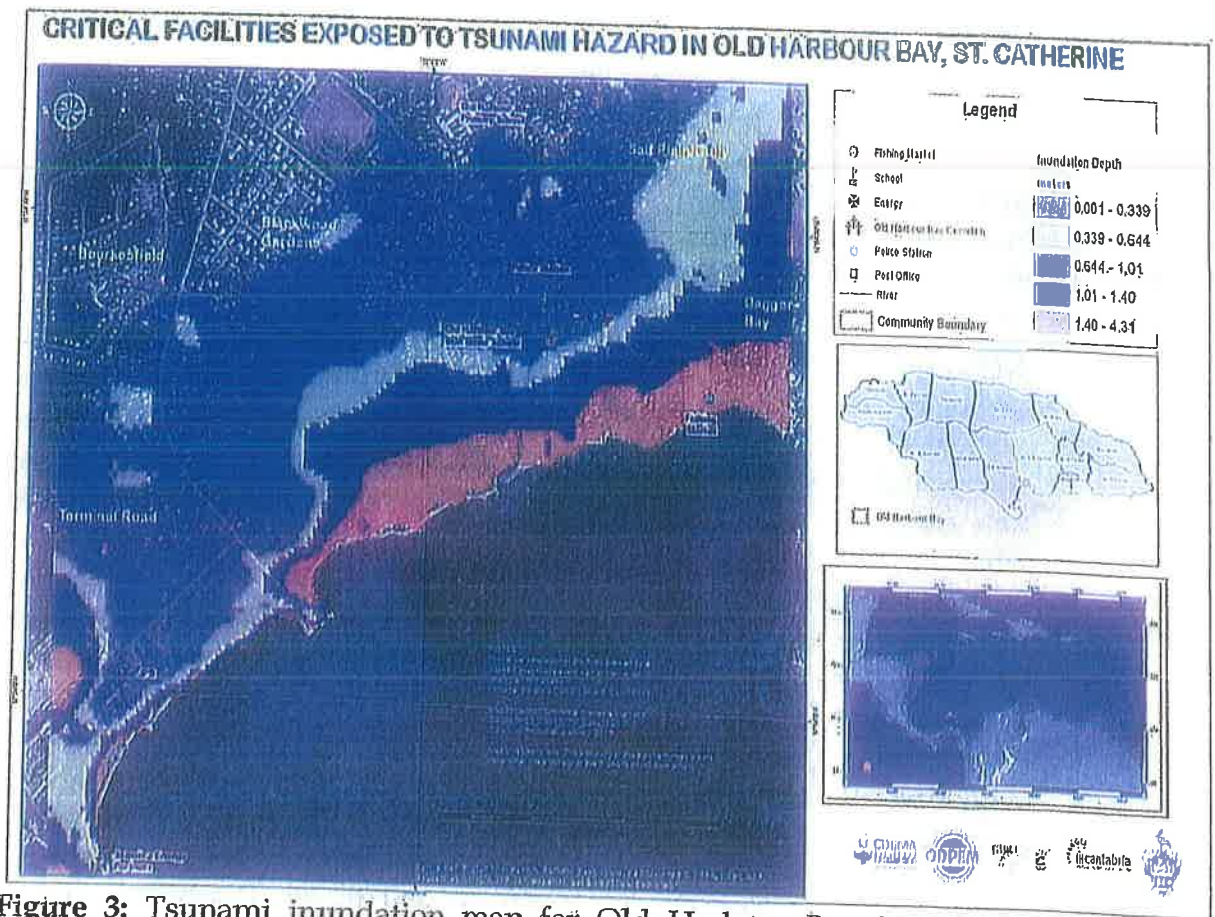
Paul Williams participated in two international training courses which were fully funded. These were, the Incorporated Research Institution for Seismology (IRIS) Data Service (DS) in cooperation with the International Association of Seismology and Physics of the Earth's Interior (IASPEI) and the International Federation of Digital Seismograph Networks (FDSN) organized a workshop focused on the management of metadata and time series data for seismological networks. This workshop and training course was held in Bogota, Colombia in July. Some area of training included seismic station instrumentation, methods of transmitting real time data, development of station metadata and new initiative related to monitoring the quality of seismological data. In October, he also attended the GFZ International training Course on Seismology, Seismic Data Analysis, Hazard Assessment and Risk Mitigation in Bogota, Colombia.

Karleen Black participated in the Clarendon Parish Council Workshop/Disaster Management Group Sector Meeting. The objective of this activity was to gather insights into what is needed to finalise the Parish Disaster Plan and where to garner this information. Participating agencies were asked to submit this information in order to make amendments to the draft for the next meeting. A map of earthquakes for a 5 year period (up to December 2013) was submitted highlighting the ones occurring in Clarendon. From the 2-3 December, 2014, she also took part in the Common Alerting Protocol (CAP) Workshop organized by the Met Office, the Finnish Meteorological Institute (FMI) and the World Meteorological Organization (WMO) as part of the SHOCS II project. CAP is the standardized alerting protocol recommended by the WMO as the messaging format for Early Warnings. The CAP protocol has the advantage that its format can be easily captured by automated systems for multiple media. Thus the message can be recognised and disseminated on the internet (e.g.,

Google) at no cost or by the more familiar media of radio and television, and as SMS messages.

## 5.0 RESEARCH IN PROGRESS

- *"Measuring slip rates on local faults and regional faults"* - Collaborative project with Professor Charles DeMets, University of Wisconsin at Madison, USA, to measure movements between the Caribbean Plate, the North American Plate and the Gonâve Microplate using GPS.
- *"Evaluation and Mapping of major faults in Jamaica"* - The Department of Geography and Geology has published the first in a series of 1:50,000 scale geological maps of the parishes of Jamaica in February 2015. The first parish geological map, that for the parish of St. Catherine, was launched at the UWI's research day, and two further parishes are hoped to be published in 2015. The new maps will lead to the development of new fault maps for Jamaica against which earthquake activity will be compared.
- *"CDEMA-ODPEM CHILESPANA AECID Workshop Series"* - During the reporting year, the EQU has been an active member of the joint CDEMA-ODPEM CHILESPANA AECID Workshop Series looking at the susceptibility of the Caribbean to tsunami with Jamaica as a case study. Three workshops were held (two on modelling and one disseminating the results) which focused on the modelling of tsunami risk analysis using Old Harbour Bay in the parish of St. Catherine as the pilot project. The project produced inundation maps that were used to plan tsunami drills and estimate potential loss based on a tsunami originating due to an offshore earthquake in Panama. The first two workshops were held at the Department of Geography and Geology at the UWI, and the final workshop (disseminating results) was held at ODPEM headquarters in New Kingston (Figures 3 and 4).



**Figure 3:** Tsunami inundation map for Old Harbour Bay for a tsunami generated offshore Panama as generated during the CDEMA-ODPEM CHILESPANA AECID Workshop Series.

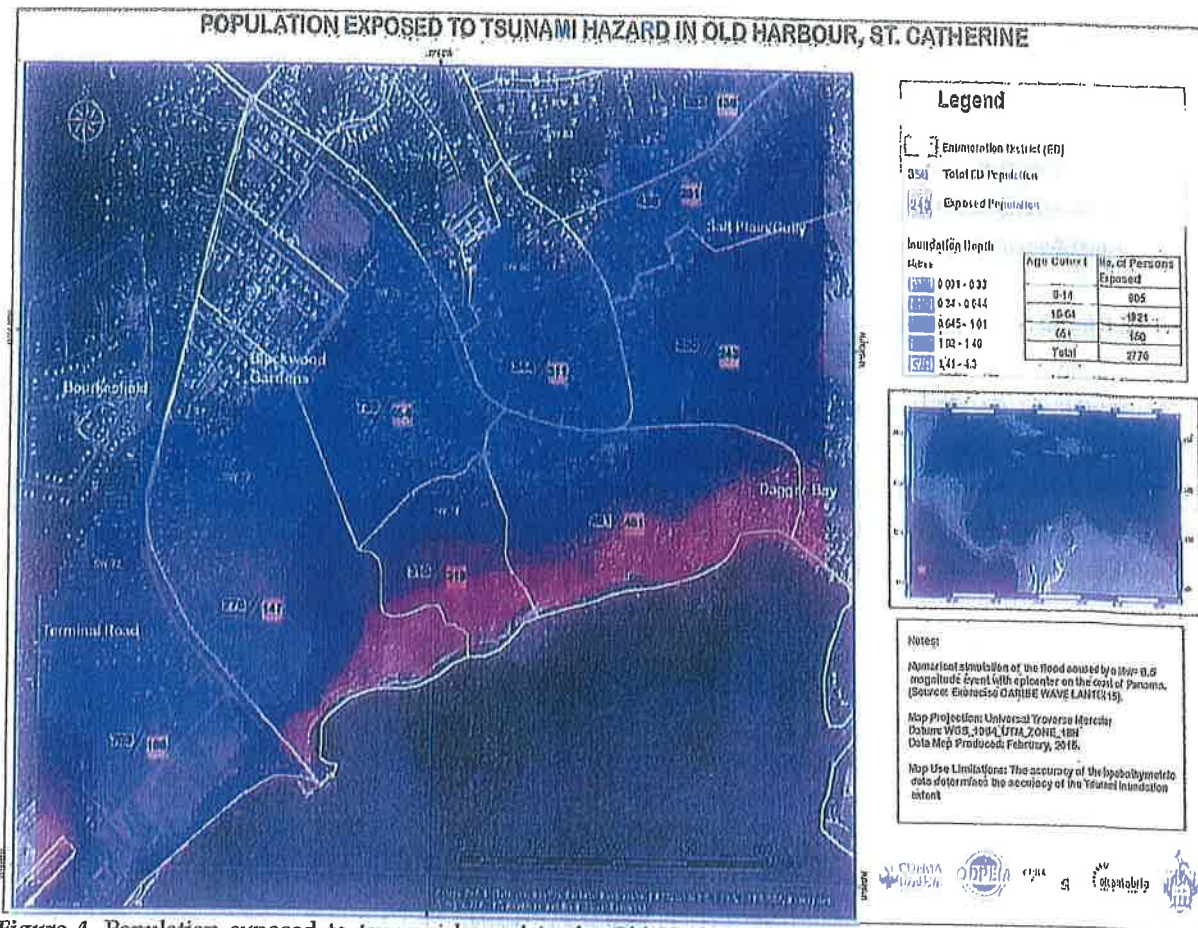


Figure 4. Population exposed to tsunami hazard in the Old Harbour Bay area (for a tsunami generated offshore Panama) as generated during the CDEMA-ODPEM CHILESPANA AECID Workshop Series.

## 6.0 PRESENTATIONS

Mitchell, S.F. "Jamaica: vulnerability to earthquakes" Earthquake Awareness Workshop, ODPEM and Ministry of Tourism and Entertainment, Thursday, 27<sup>th</sup> March 2014, Knutsford Court Hotel, Kingston, Jamaica.

Mitchell, S. F. "Jamaica and Earthquake Risk" Warden Conference, 12<sup>th</sup> September 2014, United States of America Embassy, 142 Old Hope Road, Kingston, Jamaica.

Mandal, A., Mitchell, S.F. and Mitchell, K.-A. "The Standard for Tsunami Inundation Modelling" CDEMA -ODPEM CHILESPANA AECID workshop "Regional Seismic and Tsunami Risk Workshop, ODPEM Headquarters, Jamaica, 3<sup>rd</sup> March 2015.

## 7.0 INCOME GENERATION

The Earthquake Unit undertook a small number of consultations during this year, which brought in a total of \$18,000.

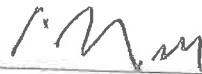
## 8.0 COMMUNITY SERVICE

The Earthquake Unit works in close collaboration with ODPEM and the Jamaica Institute of Engineers in disseminating the findings of research and provides advice of

national significance to both institutions. The EQU also works with ODPEM in its educational and community outreach.

The Earthquake Unit was involved in Earthquake awareness month which was held in January (and early February) 2015. Activities included: ODPEM Montego Bay Expo in Sam Sharp Square (6<sup>th</sup> February 2015).

The EQU was involved in the ODPEM Launch of the Jamaica Hazards Handy Manual on the 25<sup>th</sup> of February 2015 at the ODPEM Headquarters. The manual was made possible by JICA with support from organisations including the EQU (Prof. Mitchell reviewed relevant sections and suggested amendments). There was a symbolic handover ceremony to the Hon. Noel Arscott, Minister, Ministry of Local Government and Community Development by JICA. The manuals will be sold to the public for a nominal fee of Three Hundred (\$300) Jamaican dollars.



Phillip Paulwell

Minister

Science, Technology, Energy and Mining

April 13, 2015



# ELECTORAL MATTERS

MINISTRY PAPER NO: \_\_\_\_\_

PERFORMANCE OF THE ELECTORAL COMMISSION OF JAMAICA/  
ELECTORAL OFFICE FOR FINANCIAL YEAR 2014/2015 AND PRIORITY FOCUS  
FOR FINANCIAL YEAR 2015/2016

**1.0 PURPOSE OF MINISTRY PAPER**

This Ministry Paper is intended to inform Parliament and the public on the performance of the Electoral Commission of Jamaica (ECJ) during the 2014/2015 Financial Year and its focus for the 2015/2016 Financial Year.

**2.0 MISSION**

To so conduct national elections that no advantage is given to any party or individual contesting the polls ensuring that the objective of one man one vote is met under the six stated principles of universal adult suffrage

The Principles are:

- The Vote is Universal
- The Vote is Free
- The Vote is Secret
- The Vote is Direct
- The Vote is Personal
- The Vote is Non Transferable

**3.0 BACKGROUND/ROLE AND FUNCTIONS**

The Electoral Commission of Jamaica (ECJ) is the public body responsible for conducting election in Jamaica. In addition to conducting General Elections, Local Government Elections, By-elections or referenda, the Commission has the responsibility for compiling and maintaining the register of eligible electors and verifying the identity of every eligible elector.

The ECJ in carrying out this responsibility has a continuous registration system in place and an updated voters list is published twice per year on May 31 and November 30 of each year.

**4.0 VISION**

The Vision of the Electoral Commission of Jamaica which has been internationally recognized as a world class election management body is to optimize and utilize available resources to achieve greater transparency, credibility, integrity and professionalism in election management and administration of all its functions.

To vigorously promote the principles of fairness, accountability, good governance and ensure that elections are conducted in accordance with the law and thereby giving effect to the will of the people.

#### 5.0 THE GLOBAL AND LOCAL ENVIRONMENT

Both the Local and Global environment impacted the ability of the ECJ to fully undertake all of its planned activities for 2014/2015.

#### 6.0 BUDGETARY ALLOCATION FOR FINANCIAL YEAR 2015/2016

Compensation of Employees	\$536,295,000.00
Travel Expenses and Subsistence	\$ 63,645,000.00
Rental of Property, Machinery and Equipment	\$ 96,507,000.00
Public Utility & Comm. Services	\$ 81,315,000.00
Purchase of Other Goods and Services	\$ 2,323,242,000.00
Pension Benefits	\$ 22,000,000.00
Capital Goods	<u>\$ 628,188,720.00</u>
<b>TOTAL</b>	<b>\$3,123,004,000.00</b>

#### 7.0 PROGRAMMES AND TARGETS FOR FINANCIAL YEAR 2015/2016

Among the programmes and targets are:

##### A GENERAL/ADMINISTRATION

1. The start and completion of the first phase of the house-to-house enquiring and re-verification exercise.
2. The continued registration and addition of qualified applicants to the voters' list.
3. The processing of the RGD and other available data to facilitate Dead Elector removal from the voters' list.
4. The managing and conducting of the Local Government Election legally due between March and June of 2015.
5. The advancing of the digitizing of the Elector Registration Records for storage to ensure compliance with the legal requirements.
6. The full implementation of the Electronic Registration System (Livescan) for the capturing of electors fingerprint across the island.

7. The upgrading of the Electronic Voter Identification Ballot Issuing System (EVIBIS).
8. The technical review and strengthening of description for Electoral Boundaries datasets.
9. Revision and correction of constituency boundary anomalies identified.
10. The adjustment of constituency boundaries in St. Andrew to correct breach of the constitutional limit where St. Andrew North East is currently in breach of the lower limit of the number of electors in a constituency.
11. Review and adjust Polling Division boundaries where the number of electors have changed and will negatively impact the administration of the elections on polling day.

## B LEGAL

Complete Enactment of Legislation recommended in Reports that have been laid before Parliament namely;

- I. Removal from the legislation of sentencing provisions
- II. Authority of ECJ to set Electoral Division Boundaries
- III. Campaign Financing
- IV. Implementation of ECJ Process Regulations
- V. Report on Continuous Legal Reform

**Other Legal Issues to be considered;**

- I. Legislation to restrict selected Commissioners and Director from immediately engaging in elective politics immediately after leaving office.
- II. Completion of a Compendium of election Laws
- III. The establishment of guidelines governing ;
  - The setting of Electoral Division Boundaries
  - The size of Electoral Divisions
  - The frequency of the review of electoral division boundaries.

## C CAPITAL

1. In preparation for the elections in 2015/2016, and the re-verification and house-to house enquiry, capital expenditure will be undertaken to acquire additional laptops, Cameras, ballot cutting machines, stitchers, photocopiers, printers, and motor vehicles.
2. Finalize the purchase of a MX6000 Identification Card Printing Machine to replace the now obsolete machine. All electors are to be issued with a new

elector Identification Card at the end of the re-verification and house-to-house enquiry.

**D SOFTWARE UPGRADES**

1. Upgrades for software used to operate the Electronic Voter Identification and Ballot Issuing System used on election day.
2. Upgrading of fingerprint extraction software and hardware to facilitate the switch from manual to electronic fingerprint capture.

The budget of \$3,123,004,000.00 will support the plans of the Electoral Office to implement the programmes necessary to both fulfil its constitutional requirement and prepare and conduct any elections called in 2015/2016.

**8.0 PERFORMANCE/ACHIEVEMENT - FINANCIAL YEAR - 2014/2015**

The shortfall in budgetary allocation did not allow the Electoral Office to carry out several planned programmes during the 2014/2015 financial year. These include:-

- I. Residence Re-verification enquiry;
- II. Commencement of Boundaries review; and
- III. Comprehensive Dead Elector Removal.

However, the office was able to carry out its core functions and was able to achieve several targets. Included among the list are:-

- The May 31, 2014 and November 30, 2014 voters' lists were published as scheduled with thirty-one thousand six hundred and three (31,603) and thirty-two thousand four hundred and thirty one (32,431) persons respectively added.
- The identification and removal of eleven thousand six hundred and sixty seven (11, 667) dead electors from the voters list.
- Piloting of the electronic fingerprint capture (Livescan) in four (4) constituencies.
- Managing successfully the parliamentary bi-election in Westmoreland Central in December 2014.
- The enacting of the Political Party registration bill.
- Continued involvement in electoral observer missions in several jurisdictions.
- The documentation and publication of the History of the ECJ in the development of the democratic process in Jamaica.

**REVISED ESTIMATED OPERATIONAL EXPENDITURE - 2014/2015**

Compensation of Employees	\$553,531,000.00
Travel Expenses and Subsistence	\$ 48,585,000.00
Rental of Property, Machinery and Equipment	\$ 52,277,000.00

Utilities and Communication Services	\$ 60,660,000.00
Purchase of Other Goods and Services	\$ 76,573,000.00
Pension Benefits	\$ 38,913,000.00
Purchase of Equipment	\$ 37,400,000.00
<b>TOTAL</b>	<b><u>\$869,939,000.00</u></b>

NB. The budget submitted by the Electoral Office in 2014/2015 was \$3.4 billion.



Phillip Paulwell  
Minister  
Leader of Government Business  
April 13, 2015