Office of Utilities Regulation

Determination Notice

National Water Commission
Mid – Tariff Review 2016

2016 December 5

OFFICE OF UTILITIES REGULATION

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DOCUMENT TITLE AND APPROVAL PAGE

1. DOCUMENT NUMBER: 2016/WAS/003/DET.001

2. DOCUMENT TITLE: Determination Notice - National Water Commission Mid–Tariff Review 2016

3. PURPOSE OF DOCUMENT

This document sets out the Office's decisions on issues related to the National Water Commission's Mid–Tariff Review, the first for the utility.

4. ANTECEDENT PUBLICATIONS

Publication Number	Publication Title	Publication Date
2013/WAS/004/DET.003	National Water Commission Review of Rates - Determination Notice	2013 October 01
2014/WAS/004/RCN.001	Reconsideration of the Office's Decision: Determination Notice (Document No. 2013/WAS/004/DET.003) on "National Water Commission Review of Rates"	2014 July 24
2015/WAS/002/RFW.001	Regulatory Framework for the National Water Commission (October 2013 – September 2018)	2015 April 20

5. Approval

This document is approved by the Office of Utilities Regulation and the decisions therein become effective on 2016 December 5

On behalf of the Office:

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Chairman
Joseph M. Matalon

2016 | 12 | 05
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Date

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Abbreviations, Acronyms and Definitions

ANPAM	-	Annual reset for Price Adjustment Mechanism
CAPM	-	Capital Asset Pricing Model
Commission	-	National Water Commission
CPI	-	Consumer Price Index
CReW Project	-	Caribbean Regional Fund for Wastewater Management (CReW)
CWTC	-	Central Wastewater Treatment Company Limited
EDWT	-	Economic Development Wastewater Tariff Scheme
FE	-	Foreign Exchange
FY	-	Financial Year
GCT	-	General Consumption Tax
GDP	-	Gross Domestic Product
Government	-	Government of Jamaica
IDB	-	Inter-American Development Bank
IG	-	Imperial Gallon
JMD	-	Jamaican Dollars
KMA	-	Kingston Metropolitan Area
KSA	-	Kingston and St. Andrew Area
KWh	-	Kilowatt Hour
Migd	-	Million Imperial Gallons daily
NBV	-	Net Book Value
NEPA	-	National Environmental Planning Agency
NRW	-	Non-Revenue Water
NWC	-	National Water Commission
NWC Act	-	National Water Commission Act
NWC Regulations	–	Regulations promulgated under the National Water Commission Act

NWC Regulatory Framework 2013 – 2018 – Regulatory Framework for the National Water Commission (October 2013 – September 2018) Document Number: 2015/WAS/002/RFW.001 dated 2015 April 20

O&M	-	Operating and Maintenance
OUR/Office	-	Office of Utilities Regulation
OUR Act	-	Office of Utilities Regulation Act
PAM	-	Price Adjustment Mechanism
PPP	-	Private Public Partnership
UFW	-	Un-accounted for water
USD	-	United States of America Dollars

1 Introduction

1.1 In the National Water Commission Review of Rates - Determination Notice dated 2013 October 01, Document No. 2013/WAS/004/DET.003 (the "2013 Determination Notice"), the Office of Utilities Regulation ("OUR/Office") stated that a mid-tariff review should be undertaken midway the approved five year tariff period.

1.2 In said 2013 Determination Notice, the Office indicated that one of the purposes of the mid-tariff review was to examine the performance of the Guaranteed Standards Scheme to which major changes had been effected. Notably, three (3) new standards were added and six (6) of the existing twelve (12) standards were amended. The compensation type for these standards was also changed, resulting in ten (10) standards requiring the filing of a claim by consumers with the National Water Commission ("NWC/Commission"), while compensation for seven (7) standards became automatic.

1.3 Also, in the 2013 Determination Notice, the OUR reserved the right to review the K-Factor and X-Factor schedules two (2) years after their implementation so as to properly align cash inflows with financing requirements.

1.4 On 2016 July 1, the NWC submitted what it purported to be its mid-tariff review application to the OUR for analysis. In its application, the NWC proposed that the OUR give consideration to the following:

- The reduction of the X-Factor to zero for the remainder of the tariff period.
- The reduction of the deemed revenue to 87% of billings for the remainder of the tariff period.
- The allowance of a special adjustment in the Price Adjustment Mechanism (PAM) as a Z-Factor claim to assist in redressing the financial losses experienced by NWC as a result of the extreme drought and other events that affected the NWC's costs.
- An increase of the K-Factor percentage from the current 14% to a higher level that would allow the NWC to service additional loans required to finance its non-Public Private Partnership ("PPP") capital works projects. NWC estimated that an adjustment of the K-Factor to at least 20% would be required.
- A revision of the financial and operational targets set for the Commission for the tariff period 2013- 2018.
- The review of the content of the draft policy documents namely Water Trucking, Disconnection/Reconnection, Meter Tampering/Illegal Connection and Allegations/ Damaged Meters, which it submitted in its application.

1.5 By way of communication dated 2016 July 21, the OUR advised NWC of its intention to post its application on the OUR's website, which is consistent with the OUR's established practice of making the application available to the public. In response, the Commission requested that the document be withheld from the public domain until a meeting between the NWC and the OUR was held. That meeting took place on 2016 August 4, and it was agreed that the NWC would take the opportunity to refine the previously submitted mid-tariff review application and re-submit same to the OUR.

1.6 The revised mid-tariff review application was presented to the OUR on 2016 August 17 and reflected no major changes to NWC's original application. However, it included proposals by the NWC to improve a number of areas of its operations. In the application the NWC outlined that it had anchored its plans to become a well performing utility based on the following strategic objectives:

- Grow revenue and available cash
- Increase operational efficiency
- Improve customer service delivery and public image
- Build staff capacity

1.7 This Mid-Tariff Review Determination Notice reflects the OUR's review and analysis of the issues raised in the mid-tariff review submission. The analysis is guided and informed by current applicable Determination Notices of the OUR, the Office of Utilities Regulation Act ("OUR Act"), the National Water Commission Act ("NWC Act"), the regulations made pursuant to the NWC Act ("NWC Regulations") and the NWC Regulatory Framework 2013- 2018.

2 Legislative and Regulatory Framework

2.1 The NWC is a body corporate established under section 3 of the NWC Act. Pursuant to section 4(1)(d) & (e) of the NWC Act, the functions of the NWC includes, inter alia, to "within the limits of its resources provide and improve water supply services throughout the Island" and "maintain and operate water supply services provided by the Commission".

2.2 Pursuant to section 4 of the OUR Act, it is a function of the Office, inter alia, to regulate the supply and distribution of water and the provision of sewerage services. The Office has specific authority to approve the rates charged for the provision of these services, which authority can be found in sections 4(4), 11, 12 and 13 of the OUR Act.

2.3 Sections 4(4), 11 and 12 of the OUR Act in particular provide as follows:

> *"4. - (4) Subject to subsection (4A), the Office shall have power to determine, in accordance with the provisions of this Act, the rates or fares which may be charged in respect of the provisions of a prescribed utility service.*
>
> *11. - (1) Subject to subsection (3), the Office may, either of its own motion or upon application made by a licensee or specified organization (whether pursuant to subsection (1) of section 12 or not) or by any person, by order published in the Gazette prescribe the rates or fares to be charged by a licensee or specified organization in respect of its prescribed utility services.*
>
> *(2) For the purposes of this section, the Office may conduct such negotiations as it considers desirable with a licensee or specified organization, industrial, commercial or consumer interest, representatives of the Government and such other persons or organizations as the Office thinks fit.*
>
> *(3) The provisions of subsections (1) and (2) shall not apply in any case where an enabling instrument specifies the manner in which rates may be fixed by a licensee or specified organization.*
>
> *12. - (1) Subject to subsection (2), an application may be made to the Office by a licensee or specified organization by way of a proposed tariff specifying the rates*

or fares which the licensee or specified organization proposes should be charged in respect of its prescribed utility services and the date (not being earlier than the expiration of thirty days after the making of the application) on which it is proposed that such rates should come into force (hereinafter referred to as the specified date).

(2) As respects a specified organization referred to in section 13 an application made under subsection (1) of this section shall take into account the provisions of section 13.

(3) Where an application by way of a proposed tariff is made under subsection (1) notice of such application and, if so required by the Office, a copy of such tariff shall be published in the Gazette and in such other manner as the Office may require.

(4) A notice under subsection (3) shall specify the time (not being less than fourteen days after the publication of the notice in the Gazette) within which objections may be made to the Office in respect of the proposed tariff to which the notice relates.

(5) Subject to the provisions of this Act, the Office may, after the expiration of the time specified in the notice under subsection (3), make an order either –

- *(a) confirming the proposed tariff without modifications or with such modifications as may be specified in the order; or*
- *(b) rejecting the proposed tariff.*

(6) If, after publication of the notice of an application in accordance with subsection (3), no order under subsection (5) has been made prior to the specified date, the proposed tariff shall come into force on the specified date.

(7) An order confirming a proposed tariff shall not bring into operation any rates or fares on a date prior to the date of such order."

3 Executive Summary

3.1 In the 2013 Determination Notice, the OUR specified that a mid-tariff review would be conducted to examine the performance of the Guaranteed Standard Scheme to which major changes had been effected. The OUR further reserved the right in the said Determination Notice to review the K-Factor and X-Factor schedules two (2) years after their implementation to properly align cash inflows with financing requirements.

3.2 The NWC submitted to the OUR its mid-tariff review application on 2016 July 1. A replacement version of the application was received by the OUR on 2016 August 17. The following constitutes a summary of NWC's mid-tariff review application and the determinations made by the Office. The content of the application and the reasoning applied by the Office in arriving at its determinations are set out in greater details in subsequent sections.

NWC's Proposed Regulatory Adjustments

3.3 The NWC stated that in order to relieve its dire financial situation, the OUR is being requested to reconsider certain positions outlined in the 2013 Determination Notice and make adjustments to same.

Revision of the X-Factor

3.4 The NWC indicated that the X-Factor is currently at 5.5% which translates to an annual deduction of $1.25 billion from revenues. An increase of the X-Factor to 9.7% would result in an annualized deduction of $2.45 billion. This would represent an increase of $1.2 billion in deductions. The NWC contended that such an increase could not be absorbed by the Commission at this time. NWC therefore proposed that the X-Factor be reset to zero for the remainder of the tariff period so as to provide some "breathing space" for the financing of its operations.

Reduction of the deemed revenue to 87% of billings

3.5 The NWC conceded that it was aware of the need to make efforts to maximise collections, particularly given its cash flow challenges. The Commission noted that during the time period 2013 October to 2015 August, the average collection rate was 86%. With the deemed K-Factor inflows calculated on the basis of 92% of the K-Factor billing, the cash that would normally have been available for day to day operations had to be diverted to the K-Factor Fund. The Commission stated that the amount of money affect by the diversion was just over $12 million per month.

Special adjustment to the PAM (Z-Factor)

3.6 To assist in redressing the financial losses experienced by the NWC as a result of the extreme drought and other unforeseen events that have affected the NWC's cost, the NWC requested the implementation of a Z- factor variable in its current tariff regime.

Adjustment to the K-Factor

3.7 To finance its expenditure on capital projects, the NWC proposed that the previously approved K-Factor percentage be increased from its current level of 14% to at least 20% for the remainder of the tariff period. This would allow the NWC to service additional loans acquired to finance its non-PPP capital works projects.

Revisions to the Financial and Operational Targets

3.8 The NWC proposed a revision of some of its financial and operational targets for the remainder of the tariff period. It insisted that the proposed revisions were based on the reality of the NWC's current financial standing and its capacity to perform its day to day operational tasks efficiently and effectively.

Issues Requiring Policy Development

3.9 The NWC indicated that in the 2013 Determination Notice, the OUR had identified fundamental deficiencies in areas of its service delivery that would be more appropriately addressed through the implementation of business policies. The NWC was therefore required to develop and implement policies on Water Trucking, Disconnection/ Reconnection and Meter Tampering/Illegal Connection Allegations/ Damaged Meters subject to the Office's approval. Draft policies were developed by the NWC and were included in its mid-tariff review submission.

The OUR's Comments and Feedback

3.10 Following its review and analysis of the mid-tariff review application and consistent with statutory requirement, the OUR by way of letter dated 2016 October 21 solicited comments on the Draft Determination Notice from the NWC. The NWC was required to submit its comments by 2016 October 27. Comments from the NWC were received on 2016 November 11 and the representatives of the OUR met with the NWC‘s tariff team to afford the Commission the opportunity to discuss it response.

3.11 The NWC in its response, queried the accuracy of the K-Factor calculations, requested a revision of some of the financial and operating targets and clarification of the wording of one of the Guaranteed Standards. The focus of the Commission's comments however, was centered on a request for the reconsideration of the decision to restrict the use of the K-Factor funds only for the financing of on-going projects and servicing existing loans. NWC proposed the approval of both upcoming and ongoing projects as part of the K-Factor Programme. The NWC's position was predicated on an argument that it had planned to commence some critical projects in this financial year, which would be beneficial to increasing its efficiency.

3.12 The NWC also indicated that the Government had directed it to undertake pipeline and sewer installation projects in coordination with the road improvement projects being conducted by the National Works Agency (NWA) as Major Infrastructure Development Programme (MIDP) financed by the Chinese EX-IM Bank. The Commission outlined that it was seeking the OUR's approval to include these projects as part of the K-Factor Programme. The NWC suggested that if the OUR were to reconsider its position and allow it to continue with projects already approved but not yet started, this would at least give it the flexibility to prioritize its projects and give consideration to funding (directly and by way of loans) the MIDP projects.

3.13 The Office determinations and recommendations set out below take into consideration the content of both the NWC's mid-term tariff review application and its comments on the Draft Mid-Tariff Determination Notice.

The Office's Determinations and Recommendations

3.14 The Office determinations in respect of NWC's mid-term tariff application are as follows:

Revision of the X- Factor

3.15 The Office takes the position that the NWC's request for the zeroing of the X-Factor is not justified. Among the major objectives of the K-Factor regime, is to incentivize the NWC to achieve greater efficiency. The Office does not consider that NWC's proposal enhances that objective. It has however concluded that there is a need to modify the X-Factor mechanism in a bid to incentivize the NWC to expedite the reduction of non-revenue water losses. The Office has determined that the K-Factor regime should be modified as follows:

The X-Factor shall be kept at 5.5% for the remainder of the tariff period so as to stabilize the Commission's current fragile financial position. However, this is subject to the following conditions:

a) Using 68.5% as a reference point, for every 1% reduction in non-revenue water losses in a given year, the applied X-Factor will be reduced by 1% in the following year;

b) Using 68.5% as the reference point, for every 1% increase in non-revenue water losses in a given year, the X-Factor will be increased by 1% in the following year.

Reduction of the deemed revenue to 87% of billings

3.16 A deemed collection rate of 88% is approved for the Commission. This represents the mean collection rate for the NWC for the last three (3) years of its tariff.

3.17 The deemed collection rate for the NWC will be reset at the anniversary of the PAM to accurately reflect any changes that may occur to the Commission's actual collection rates. The deemed collection rate will be set on the basis of the last three (3) years of collection rate data to be supplied by the NWC at the anniversary of its annual price adjustment and subject to the limitation set out below, shall be representative of the mean collection rate for the said three (3) years.

3.18 Notwithstanding the foregoing, in order to allow for a reliable inflow of funds to the K-Factor account, the deemed collection rate calculated in any year is not allowed to be less than 88%. This will ensure that the K-Factor Fund will be available to finance the loan obligations of the NWC throughout the period.

Adjustment to the K-Factor

3.19 The Office has determined that the K-Factor rate be set at 16% for the remainder of the tariff period. This will allow the deemed K-Factor inflows to match the financing requirements to complete the approved ongoing projects and service existing debt. Nonetheless, the Office reserves the right to increase this rate should the NWC presents a comprehensive credible proposal to justify such an increase.

Special Adjustment to the PAM (Z-Factor)

3.20 The Office has denied the NWC's request for the inclusion of a price escalator (Z-Factor) in the Mid-Tariff Review. As with previous submissions on this issue, the NWC's proposal is lacking in specificity in terms of a regime and in any event, there would be a need for extensive consultation on such a mechanism and its application. The Office encourages the NWC to develop a comprehensive drought management plan and submit this along with a specific proposal for the triggering, operations and application of its proposed Z-Factor escalator at the next five (5) year tariff review.

Guaranteed and Overall Standards

3.21 The NWC did not propose any fundamental changes to the existing Guaranteed Standards Scheme. However, WGS 3 (Appointments) will be modified to include a specific timeline thus adding clarity and measurability to the standard. Language modification will also be made to WGS6 (Account status), WGS7 (Water meters) accordingly.

Issues Requiring Policy Development

3.22 In the 2013 Determination Notice, the OUR had identified some areas of the NWC's service delivery as being deficient and indicated that they would be more appropriately addressed through the development of policies. The OUR required the NWC to develop and implement policies on Water Trucking, Disconnection/Reconnection and Meter Tampering/Illegal Connection Allegations/Damaged Meters.

3.23 The NWC has now submitted the said draft policies for the Office's consideration and approval. The Office will examine these proposed policies and subject them to a consultation process outside of this mid-tariff review. It is intended that the review and consultation will be completed prior to the next tariff period.

Revisions to the Financial and Operational Targets

3.24 The NWC indicated that the specified targets that were previously proposed by them and accepted by the OUR will be difficult to achieve given the financial difficulties that the Commission has experienced. The OUR has reviewed the operational and financial targets proposed by the NWC and has made changes to the Commission's Non-Revenue Water (NRW) target, and coverage ratios, the NWC's Profitability, Liquidity, Bankability and Gearing ratios were also adjusted after consultation with the company.

4 NWC's Proposed Regulatory Adjustments

Introduction

4.1 In its mid-tariff review application, the NWC argued that since the issuance of the 2013 Determination Notice, it had been challenging for the NWC to perform under the new tariff regime largely due to:

- The crippling drought of 2014, which further intensified during 2015.
- Increased operating cost as a direct result of efforts to address some of the problems engendered by the continuing drought conditions.
- The general sluggishness of the Jamaican economy which had adversely impacted disposable income and forced an increasing number of customers into delinquency.
- Application of General Consumption Tax (GCT) on NWC's electricity bill.
- Insufficiency of available cash to support the day-to-day operations of the Commission.

4.2 The NWC explained that in order to relieve its dire financial situation, the OUR was requested to:

- Reduce the X-Factor to zero for the remainder of the tariff period.
- Reduce the deemed revenue to 87% of billing for the remainder of the tariff period.
- Allow a special adjustment in PAM (Z-Factor) to assist in redressing the financial losses experienced by the NWC as a result of the extreme drought and other events that have affected the NWC's cost.
- Increase the K-Factor to at least 20% from the current 14% and allow the K-Factor to finance the NWC's Capital Works Programme. The proposed increase in the K-Factor would allow NWC to service additional loans required to finance its non-PPP capital works projects.

Background

4.3 Prior to its mid-tariff review submission, the NWC in correspondences dated 2015 September to the OUR, specifically requested changes to its X-Factor and deemed collection rate. In the ensuing engagement, and after significant time had elapsed, NWC was invited to enter into discussions with the OUR on these matters. It was subsequently agreed that these requests would be considered during the mid-tariff review. The NWC therefore included the information that it initially provided in support of its requests, in Appendix 2 of its mid-tariff review submission. The main points of the NWC's mid-tariff submission are outlined below.

Revision of the X-Factor

4.4 The NWC recounted that in its 2013 Tariff Application, it had proposed that the X-Factor schedule be in line with the efficiencies that the NWC had achieved and could realistically achieve by implementing its capital expenditure programme over the period 2013-2018. The Commission had proposed that the X-Factor be set to zero for the first three (3) years of the tariff period and be set to 2.3% in 2017. The OUR however approved the X-Factor schedule (See Table 1 below) in the 2013 Determination Notice.

Table 1: X-Factor Schedule

Tariff Year Ending	September 2014	September 2015	September 2016	September 2017	September 2018
X-Factor	0%	5.5%	9.7%	12.7%	15.2%

4.5 The NWC observed that at its current 5.5%, the X-Factor translates to an annualized deduction of $1.25 billion from revenue, while an increase to 9.7% will result in an annualized deduction of $2.45 billion – an increase of $1.2 billion. The NWC's argued that it could not afford this deduction from its operational revenue. The NWC proposed that the X-Factor be reset to zero for the remainder of the tariff period so as to provide some "breathing space" for the Commission to finance its operations.

4.6 In support of its argument to have the X-Factor reduced to zero, the NWC asserted that the crippling drought since 2014 had caused a reduction in the water available for distribution to its customers. Therefore, revenues projected were lower than actual. The Commission also highlighted that the limited water supply and the measures that the NWC had to take to minimise the resulting impact have caused:

- Increases in the trucking of water to areas where it was difficult to provide piped water under the water restriction.
- Increases in the number of main breaks as a result of the aged infrastructure and the frequent turning on and off of supplies.
- Increases in the average number of man-hours required to manage the water distribution system.

- Unbudgeted expenditures on projects to add new water sources to augment water supplies and to rehabilitate wells and other water supply facilities.

Adjustments to the K-Factor

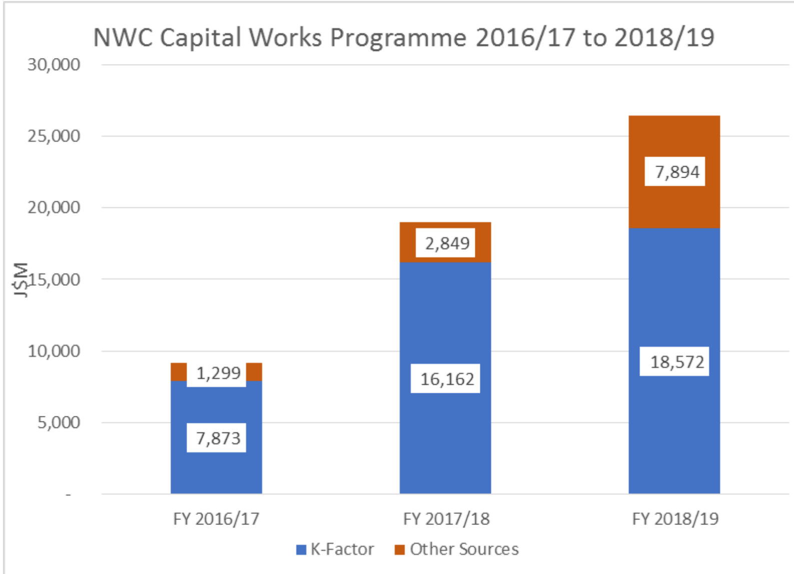
4.7 In its 2008 submission for a tariff adjustment, the NWC proposed that a K-Factor be established to fund capital projects with the following objectives being, to:

- Fund capital intensive programmes of efficiency improvement inclusive of mains replacement, and other NRW activities.
- Fund capital rehabilitation sewerage programmes that will not yield any significant increases in revenue for the NWC, but which are required to comply with specific regulatory directives of NEPA.
- Incorporate the expansion of the collection network for wastewater so as to better utilise the Soapberry Wastewater Treatment Plant.

The implementation of the K-Factor became effective 2008 May 1 and has continued into the current 2013- 2018 tariff period.

4.8 The funds generated from the K-Factor are designated to finance projects aimed at expanding the sewer collection network, rehabilitating selected wastewater treatment plants and reducing NRW levels. The NWC posited that it would require expenditures of about $55 billion through to the end of financial year 2018/2019 to finance its capital works programme. The Commission indicated that steps are being taken to implement some of these projects through PPP.

Figure 1: NWC's Capital Works Programme



4.9 The NWC signalled that it intends to package a number of the planned projects to seek loan financing rather than use funds from its operations. K-Factor eligible projects would be approached in a similar manner and the deemed K-Factor cash flows used to service such loans.

4.10 To finance the NWC's expenditures, it proposed that the K-Factor percentage be increased from the current 14% to a higher level that would allow it to service additional loans acquired to finance its non-PPP capital works projects. The NWC estimated that an adjustment of the K-Factor to at least 20% would be required for this purpose.

4.11 Based on the NWC's calculations, from the suite of one hundred and thirty one (131) projects that were approved by the OUR in the 2013 Determination Notice, sixty-two (62) have been completed, thirty seven (37) are currently being implemented and thirty-two (32) are yet to commence.

4.12 The NWC contended that the projected cash inflows would not be sufficient to sustain up-coming or new projects, which would mean that these projects would have to be deferred until funding is available. The NWC insisted that it was taking steps to address the 'Direct Spending' approach currently being used to finance K-Factor projects. Going forward, it would therefore revise its operation of the K-Factor Programme so that the present financial commitments could meet the schedule of its ongoing and upcoming projects.

Special Adjustment to PAM (Z-Factor)

4.13 In support of its argument for a special adjustment to its PAM, the NWC stated that in the 2008-2013 tariff period, it had proposed a Z-Factor to address risks to which it is exposed, but which were not incorporated in the PAM. The NWC asserted that the OUR agreed to the application of a Z-Factor in principle and had indicated that it would allow the Z-Factor to facilitate events that satisfy the flowing criteria:

- Events that affect the Commission's costs;
- Are not due to the Commission's managerial decisions; and
- Are not captured by the other elements of the tariff regime.

4.14 Though not included in its 2013 Tariff Application, the NWC requested that the OUR consider approving a Z-Factor to compensate the Commission for the increased costs that it experienced as a result of the 2014 – 2015 drought. The NWC proposed that the mid-tariff review be used as an avenue to discuss and agree on guidelines for the application of the Z-Factor.

Revisions to the Financial and Operational Targets

Financial Targets

4.15 The NWC stated that it has faced very serious financial challenges during the current tariff regime. It also stated that this situation is projected to deteriorate even further if certain tariff arrangements approved in the 2013 Determination Notice remain unchanged.

4.16 The NWC explained that in order to effect a turnaround in its poor financial performance, it would require special consideration by the OUR in its treatment of the X-Factor and the K-Factor. The Commission indicated that it expected to derive benefits from its proposed capital works programme and the aggressive and innovative commercial interventions planned. These factors were taken into consideration when developing the new financial targets proposed in its mid-tariff review application. Table 2 below outlines the proposed financial targets that the NWC would like to replace those set out in the NWC Regulatory Framework 2013 – 2018.

Table 2: Proposed financial target

Objective	Critical Measure	Definition	2016/17	2017/18
			Target	**Target**
Profitability	Profit Margin	Net Profit (Loss)/ Revenues	**-3%**	**-5%**
	Profit Margin	Operating Profit (Loss)/ Revenues	**16%**	**16%**
Liquidity	Current Ratio	Current Assets/ Current Liability	**0.78**	**0.65**
	Quick Ratio	(Current Assets – Inventory) / Current Liability	**0.70**	**0.57**
Bankability	Debt Service Coverage Ratio	EBITDA / Debt Repayment + Interest	**0.99**	**0.79**
Gearing	Debt Ratio	Total Adjusted Liabilities / (Total Adjusted Liability + Equity)	**80%**	**85%**

Operational Targets

4.17 The changes to the major expected operational targets proposed by the NWC for the remainder of the tariff regime are outlined in Tables 3 and 4 below.

Table 3: Proposed Operational Targets

Item	Parameter	Requirement	2017	2018	2019
A	Non-Revenue Water (NRW)	NRW Level	70%	68%	65%
B	Coverage	Coverage for Water Supply	75%	76%	78%
		Coverage for Sewerage	15%	16%	18%
C	Water Quality	99% compliance with the IJAM Standards	99%	99%	99%
D	Wastewater Quality	All wastewater treatment plants 100% Complaint with NEPA standards by 2014/16	20%	35%	60%

Table 4: Proposed Operational Targets

Objective	Critical Measures	Definition	Max/Min	2016/17	2017/18	2018/19
				Target	Target	Target
Improve Billing	Metering Level	Accounts with Functioning Meters/Total Accounts	Min			
	Percentage of Meters Read	Number meters Read/Total Meters	Max	97%	98%	98%
	Days of Sales Outstanding	(Net Accounts Receivables/Billed Revenue) * 365	Max	78	72	68
Increase Staff Efficiency	Staff Efficiency	Number of Employees/ Number of Connections	Max	4.0	3.8	3.8
	Staff Efficiency Sewage	Number of Sewage Employees/ Number of Sewage Connections	Max	1.2	1.2	1.1
Increase Energy Efficiency	Energy Efficiency	Total MWh Consumption/ System Input Volume	MWh/ig	4.3	3.8	3.5

5 NWC'S Performance over the period

5.1 With the advent of a performance based mechanism in the regulatory approach to setting tariffs for the NWC, the utility is now governed by an incentive-based regulatory regime. This has led to a need for more information on the performance of the NWC's business, both relative to targets set by the OUR and those set by the NWC over time.

5.2 The OUR expects that the NWC will be transparent and will provide timely information to its customers and stakeholders that will enable them to understand how the Commission is performing. The OUR requires the NWC to provide specific information that can be compared across similar utilities, allowing the OUR to evaluate the NWC's performance over time.

5.3 Against this background, the OUR in the 2013 Determination Notice and the NWC Regulatory Framework 2013 – 2018, set out a number of financial and operational performance targets that the Commission is expected to meet over the 2013 – 2018 tariff period.

5.4 This section provides a review of the information on NWC's financial and operational performance for the prior to mid-term review which was included in its mid-tariff review application. It also includes a review of and determination on the request made by the NWC to adjust some of the standards and targets approved by the OUR for the current tariff period.

Overview

5.5 At the end of the financial year 2015/2016, the NWC has reported an operating profit. The operating profit margins over the last two and a half (2½) years indicate that the NWC's revenue has been sufficient to cover operating expenses. Notwithstanding, the Commission has been simultaneously operating at a net loss for the past (2½) years. Based on the Commission's last financial statement, its depreciation and amortisation values, increased from $3.1 billion in 2013 to $6.3 billion in 2015 due to the revaluation of fixed assets in 2013. During the said financial year the NWC has also experienced huge foreign exchange losses.

5.6 The OUR is of the view that a number of the main cost drivers posited by the NWC constitutes elements that are within the control of the NWC's management. For example, the timing and effect from the post 2013 organisational restructuring should have been known to management and should have been geared towards increasing efficiency. The objective of the price cap regime is to provide an opportunity for management to assess these cost drivers and to prudently apply corrective action for the remainder of the tariff period. Additionally, on the issue of increasing operational expenses due to re-measurement of employee benefits obligations, the OUR will ensure that all prudently incurred costs that are known and measurable when filing for tariff reset at the next review period (i.e. 2018 – 2023) will be accounted for in determining NWC's revenue requirement.

5.7 The issue of depreciation cost due to revaluation of fixed assets in 2013, is one that requires further consultation between the OUR and the NWC. The OUR had previously expressed concerns about the revaluation applied by the NWC and still has doubts about the accuracy of these figures. The OUR is of the view that the NWC should re-examine these valuations as there remains an ongoing concern about the possibility of padding (over estimation) which may now be affecting the Commission's bottom line. The OUR invites the NWC to propose an early timeline to continue the discussion on how best to incorporate an agreed approach that will allow these revised values to be incorporated into the rate base at the next tariff reset in 2018.

Financial Performance

5.8 Table 5 below outlines the NWC's financial targets versus the actual performance for the fiscal periods 2013/2014 – 2015/2016.

Table 5: Financial Targets versus Actual Performance

Objective	Critical Measures	Definition	Min/ Max	2013/14	2014/15		2015/16	
				Actual	Target	Actual	Target	Actual
Profitability	Profit Margin	Net Profit [Loss]/Revenues	**Min**	-29%	**3%**	-5%	**8%**	-17%
	Net Profit Margin	Operating Profit[Loss)/Revenues	**Min**	11%	**7%**	14%	**9%**	15%
Efficiency	EBITDA Margin	EBITDA/Billed Revenue	**Min**	11%	**36%**	14%	**41%**	15%
Liquidity	Quick Ratio	Current Assets / Current Liability (incl. current portion of long term debt)	**Min**	0.68	**1.2**	0.65	**1.2**	0.73
	Quick Ratio	(Current Assets-Inventory) / Current Liability	**Min**	0.87	**1.0**	0.75	**1.2**	0.75
Bankability	Debt Service Coverage Ratio	EBITDA / Debt Repayment + Interests	**Min**	1.1	**2.5**	1.13	**2.5**	1.12
Gearing	Debt Ratio	Total Adjusted Liabilities / (Total Adjusted Liability + Equity)	**Max**	64%	**55%**	67%	**55%**	82%

5.9 The OUR observed that the non-achievement of the targeted liquidity ratio, as well as the debt service and gearing ratios, increases the risk profile of the Commission in the short run. Such risks, however, can be mitigated by the NWC's management intervention to implement measures aimed at:

- Increasing available cash by instituting measures to collect significant arears from customers; and
- Identifying alternative sources of funding major projects, such as the use of PPPs and grants.

5.10 In the 2013 Determination Notice the Office sought to ensure that the NWC could earn the required revenue to be profitable. The better than targeted performance of the NWC's profit margin ratio, (Operating Profit (loss)/ Revenue as outlined in Table 5 above), will act as an incentive for the Commission to be able to raise long-term debt at favourable rates. Cheaper debt will enhance the Commission's ability to achieve and outperform targets approved by the Office. The Commission's Net Profit/Revenues ratio target remains negative. This underscores the Commission's need to mitigate its financial risks such as loan interest payments and bank charges by sourcing cheaper loans and conducting prudent treasury operations. From the OUR's perspective, the depreciation expense as mentioned previously may be the result of over estimation of the asset values and may therefore be depressing the Commission's net profit.

5.11 The financial metrics outlined in Table 5 above show mixed results in terms of the Commission's performance versus the targets. However, if the NWC maintains prudent treasury policies aimed at improving collections, timely sequencing of disbursements, investments and funding activities, financial risk should be minimized and this would create a more stable outlook.

Revenue

5.12 The OUR granted the NWC a 19% increase in water and service charges, and an 8% increase in sewerage charges, in the 2013 Determination Notice. The K-Factor was adjusted downwards from 27% to 14% for the duration of the 2013 - 2018 tariff period, while the X-Factor was set at 0% for the first year, increasing to 5.5% in year two (2) and is scheduled to increase to, 9.7%, 12.7% and 15.2% in the subsequent four (4) years.

5.13 The Commission asserted that actual annual revenues since the implementation of the tariff have been significantly less than was projected. Table 6 below compares the actual annual revenues with the projections that were made following the 2013 Determination Notice. The NWC reported that at the end of FY 2015/16, there was an accumulated adverse variance of $20.9 billion.

Table 6: Projected Revenue versus Actual as submitted by the NWC

	2012/13	2013/14	2014/15	2015/16
Projected Revenue	21,292,860	29,877,902	31,694,646	34,667,916
Actual Revenue	21,553,419	23,819,470	25,960,689	25,130,801
Variance (Actual - Projected)	260,559	(6,058,432)	(5,733,957)	(9,460,949)
Cumulative Shortfall		(5,797,873)	(11,792,389)	(20,992,779)

5.14 The following reasons were given by the NWC for the accumulated adverse variance in revenue of $20.9 billion over the mid-term.

Billed Water Consumption and Sewerage Usage

5.15 The first of three (3) reasons posited by the NWC for the large variance in actual revenue versus projected revenue is the significant decline in billed water consumption and sewerage usage over the last two (2) years. The NWC posited that billed water consumption and sewerage usage decreased by 5% overall since the 2013 Determination Notice. The decline in water sales and sewerage usage was driven by the extreme drought conditions that prevailed over the last two (2) years. The NWC explained that these drought conditions caused a reduction in the water available for treatment and distribution. The NWC further reiterated that sewerage usage is related to water sales and therefore the reduction in water sales directly impacted on sewerage usage and revenue earned from sewerage customers.

5.16 Table 7 below shows the NWC's data on the decline in billed water consumption and sewerage usage since the 2013 Determination Notice.

Table 7: Billed Water Consumption and Sewerage Usage

	2012/13	2013/14	2014/15	2015/16	2015/16 v 2012/13
Billed Water Consumption ('000 Gallons)	19,320,802	18,944,340	18,166,580	18,376,749	
% Change		*-1.9%*	*-4.1%*	*1.2%*	***-5%***
Billed Sewerage Usage ('000 Gallons)	5,527,849	4,020,357	5,271,405	5,275,954	
% Change		*-27.3%*	*31.1%*	*0.1%*	***-5%***

5.17 The OUR is of the view that extreme drought, which is a climatic condition, is a factor that is beyond the NWC management's control. To the extent that it caused a reduction in the water available for treatment and distribution, it would have an adverse impact on the NWC's revenue. As such, the OUR has given consideration for such effects in its evaluation of the X-Factor variable in this mid-tariff review. However, to the extent that drought has become a feature of the overall climatic condition in Jamaica, it is within the NWC's control to put measures in place to mitigate its impact on the Commission's revenue. One such measure that the OUR may want to consider supporting with the allowance for the attendant capital expenditure, is the implementation of additional storage. Another measure would be to propose a **time-of-use** tariff that would ensure that NWC realises its revenue requirement during the drought period. This measure however will necessitate the NWC collecting and analysing real operational data to objectively calculate fair and cost reflective Time-of-Use rates or even the charging of a drought premium. These, however, are issues that will have to be subject to consultation and further discussion with the NWC.

Loss of Major Water Users

5.18 The second reason the NWC posited for its accumulated adverse revenue variance was that the Commission had lost nine (9) major customers in St. Ann as a result of the alleged "cherry picking" approach by some of the small water operators in the area. The NWC has a tariff regime that is applied across the country, including areas such as Ocho Rios where the cost of water production and distribution is relative low. Small operators have been able to leverage the relatively lower cost of producing and distributing water in particular areas to attract some of the larger water users to be supplied by them. The Commission estimated the annual loss of revenue resulting from the loss of major water users to be $500 million.

Growth in Number of Inactive Accounts

5.19 The third reason the NWC posited for its accumulated adverse revenue was that it had been aggressive in its treatment of delinquent customers, disconnecting services as part of the measures applied. The NWC explained that these disconnected customers became "inactive", resulting in the NWC no longer being able to generate revenue from them. The NWC further posited that the challenging economic conditions have had an adverse effect on a number of Jamaicans, and many of these persons whose services were disconnected have found it difficult to settle their arrears. As a result there was an overall 15% increase in the number of inactive accounts at the end of the 2015/16 FY compared with the end of the 2012/13 FY.

5.20 The NWC asserted that the cumulative potential loss in revenue over the period, as a result of the increase in the number of inactive accounts, was estimated at $1.8 billion. Table 8 below shows the trend in the number of inactive accounts and the potential annual revenue loss from the increased number of inactive accounts over the period 2013 April to 2016 March. The NWC explained that the average potential revenue per account is estimated at $3,000 per month.

Table 8: Inactive Accounts

	2012/13	2013/14	2014/15	2015/16
Inactive Accounts (No.)	100,599	112,189	123,015	115,999
Change *(using end 2012/13 as base)*		11,590	22,416	15,400
Potential Loss in Revenue ($M) - using end 2012/13 as		417	807	554
Cumulative Potential Loss in Revenue			*1,224*	*1,779*

5.21 The OUR is of the view that the issue of challenging economic conditions which resulted in these inactive accounts and potential loss of revenue is reflective of a normal business cycle and is not a systemic risk unique to the NWC. The OUR has previously encouraged the NWC to revisit its temporarily disconnected accounts, with a view to identifying if these customers have illegally connected to the system.

5.22 The OUR is of the view that the NWC has levers at its disposal to formulate strategies to mitigate its impact on its revenue. It is expected that the upcoming audit of the Commission's billing system will provide useful information that can be used by the Commission to formulate strategies for the revision of its billing programme to capture all relevant users of its services.

Expenses

5.23 Table 9 below shows projected versus actual expense data submitted by the NWC. It shows that the NWC outperformed the regulatory targets. Actual expenses have been less than projected during the current tariff regime. The cumulative variance over the last three (3) financial years was favourable to the extent of $2.5 billion. The favourable variance in 2015/16 was largely due to reductions in the cost of electricity, repairs and maintenance and other administrative costs, during that period.

Table 9: Projected Expenses versus Actual

	2012/13	2013/14	2014/15	2015/16
Projected Expenses	17,293,681	21,608,733	22,919,472	24,295,259
Actual Expenses	18,470,030	21,093,427	22,245,397	22,506,754
Variance (Actual - Projections)	1,176,349	(515,306)	(674,075)	(1,788,505)
Cumulative Variance		661,043	(1,189,381)	(2,462,580)

The Commission proposed new financial targets for the remainder of this tariff regime period, and these targets are shown in Table 10 below.

Table 10: Proposed Financial Targets

Objective	Critical Measure	Definition	2016/17 Target	2017/18 Target
Profitability	Profit Margin	Net Profit (Loss)/ Revenues	**-3%**	**-5%**
	Profit Margin	Operating Profit (Loss)/ Revenues	**16%**	**16%**
Liquidity	Current Ratio	Current Assets/ Current Liability	**0.78**	**0.65**
	Quick Ratio	(Current Assets – Inventory) / Current Liability	**0.70**	**0.57**
Bankability	Debt Service Coverage Ratio	EBITDA / Debt Repayment + Interests	**0.99**	**0.79**
Gearing	Debt Ratio	Total Adjusted Liabilities / (Total Adjusted Liability + Equity)	**80%**	**85%**

5.24 The OUR recognises that the Commission has faced serious financial challenges during this tariff period. These challenges could, however, have been addressed more effectively, and with greater diligence and their adverse effects may be offset over the remainder of the review period. Notably, a more focused approach to treasury management will be necessary, including improving collections and timely sequencing of disbursements, investments and funding activities. With this focus, financial risk should be minimized, resulting in a more stable financial outlook.

5.25 Additionally, the OUR is of the view that the worst of the 2014/2015 drought impact would have already being reflected in the 2015/2016 financial outturn. Consequently, it is expected that the Commission should be able to achieve financial targets no worse than the outturn for the year 2015/2016. However, since the NWC has in fact experienced a drought that has adversely affected the Commission's revenue as well as some of its costs, the Office has taken the decision to relax some of the NWC's financial targets.

Table 11: Approved Financial Targets

Objective	Critical Measure	Definition	2016/17	2017/18
			Target	**Target**
Profitability	Profit Margin	Net Profit (Loss)/ Revenues	**1%**	**1%**
	Profit Margin	Operating Profit (Loss)/ Revenues	**16%**	**16 %**
Liquidity	Current Ratio	Current Assets/ Current Liability	**1**	**1**
	Quick Ratio	(Current Assets – Inventory) / Current Liability	**0.9**	**0.9**
Bankability	Debt Service Coverage Ratio	EBITDA / Debt Repayment + Interests	**1.50**	**1.55**
Gearing	Debt Ratio	Total Adjusted Liabilities / (Total Adjusted Liability + Equity)	**60%**	**60%**

5.26 NWC outlines that its YTD profit margin stands at -15%, which would mean that it is impossible to achieve a net profit by the end of the financial year 2015/2016. The Commission proposed a profit margin of -3%. The OUR believes that most, if not all businesses at some point in time experiences a negative net profit margin. However, if the business sustains a net operating loss/negative net profit, they can experience serious cash flow difficulties since it is not earning enough to cover its expenses. The NWC has proposed a net profit margin of -3% in 2016/2017 and -5% in 2017/2018 which suggest that the Commission accepts that it will continue to make a loss for the remainder of the tariff period. Not only that, the Commission has also proposed financial targets that show that is it expecting its financial position to worsen over the remainder of the tariff period. Although, the OUR realizes that the NWC has been experiencing financial difficulties for some time, as regulator it cannot support or encourage the setting of inefficient target levels. Also, the OUR does not believe that a business entity should readily accept deteriorating financial conditions. Table 11 above outlines the new financial targets approved by the Office.

Operational Performance and Targets

5.27 The OUR established Operational Performance Targets for the NWC as part of the 2013 Determination Notice as well as the 2013-2018 Regulatory Framework. These performance targets are used to monitor the utility's operational performance during the tariff period 2013– 2018. The NWC's performance against these targets is shown in Table 12 below. The NWC has not been able to achieve its major operational targets to date.

Table 12: Operational Performance (A-F)

Item	Parameter	Requirement	Achievement
A	Non Revenue Water (NRW)	NRW at most 55% by end of year 3	NRW at 69%
B	Coverage	85% coverage for water & 60% sewerage by 2020	73% water coverage, 20% sewerage coverage
C	Water Quality	99% compliance with the IJAM standards	98% compliance
D	Wastewater Quality	All wastewater treatment plants 100% compliant with NEPA standards by 2014/15	Less than 10% compliant
E	Economic Development Wastewater Tariff (EDWT)	Complete general review of the conditions under which the EDWT is applied within the first three months of the Determination Notice	Review not done
F	Late Fee	NWC may, with the OUR's approval, apply a late fee in calendar year 2015	Late fee being applied since

5.28 Table 13 below depicts the NWC's request to change five (5) operational targets that were previously set in the 2013 Determination Notice.

Table 13: Operational Performance (G) – NWC Proposed Operational Targets

Objective	Critical Measures	Definition	Max/Min	2016/17	2017/18	2018/19
				Target	Target	Target
Improved Billing	Percentage of Meters Read	Number meters Read/Total Meters	Max	97%	98%	98%
	Days of Sales Outstanding	(Net Accounts Receivables/Billed Revenue) * 365	Max	78	72	68
Increase Staff Efficiency	Staff Efficiency	Number of Employees/ Number of Connection	Max	4.0	3.8	3.8
	Staff Efficiency Sewage	Number of Sewage Employees/ Number of Sewage Connections	Max	1.2	1.2	1.1
Increase Energy Efficiency	Energy Efficiency	Total MWh Consumption/ System Input Volume	MWh/ig	4.3	3.8	3.5

5.29 The NWC's overall NRW level is currently estimated to be 69%, which is above the 55% (maximum) target set for the end of year three (3) of the tariff period.

5.30 The OUR has examined the operational targets proposed by the NWC in its mid-tariff review application and has revised the NWC's NRW target to 68.5% in 2016/2017. The OUR has also accepted the NWC's upward movement in its percentage of meters read target, as the Commission has already surpassed the previously determined targets. The sewerage coverage ratio was reduced downwards to 35% by 2020. All other operational targets remain the same as was determined in the 2013-2018 Determination Notice. Set out in Tables 14 and 15 below are the approved operational targets.

Table 14: Approved Operational Targets

Item	Parameter	Requirement	2016/2017	2017/2018
A	Non-Revenue Water (NRW)	NRW Level	68.5%	67.5%
B	Coverage	Coverage for Water Supply 85% by 2020		
		Coverage for Sewerage to 35 % by 2020		
C	Water Quality	99% compliance with the IJAM Standards	99%	99%
D	Wastewater Quality	All wastewater treatment plants 100% Complaint with NEPA standards by the end of the Tariff Period		

Table 15: Approved Operational Targets

Objective	Critical Measures	Definition	Max/Min	2016/17	2017/18
				Target	**Target**
Improve Billing	Percentage of Meters Read	Number meters Read/Total Meters	Max	97%	97%
	Days of Sales Outstanding	(Net Accounts Receivables/Billed Revenue) * 365	Max	45	45
Increase Staff Efficiency	Staff Efficiency	Number of Employees/ Number of Connection	Max	4.5	4.5
	Staff Efficiency Sewage	Number of Sewage Employees/ Number of Sewage Connections	Max	1.9	1.8
Increase Energy Efficiency	Energy Efficiency	Total MWh Consumption/ System Input Volume	MWh/ig	2.3	2.1

6 OUR's Analysis of the Major Elements of NWC's Proposal

X- Factor Analysis

6.1 The OUR in its 2013 Determination Notice approved an annual K-Factor of 14% for the five (5) year period 2013 – 2018 for the NWC. The K-Factor concept is anchored in the recognition that over the years, the Commission has suffered some degree of capital shortage which restricted its capacity to address critical infrastructural projects required to reduce non-revenue water losses and expand its services. Additionally, the OUR determined that an annualized X-Factor of 4% over the tariff period was a reasonable index of the reduction in inefficiencies that the Commission could achieve in its day-to-day operations, and from the projected K-Factor investments. Implicit in the X-Factor determination was the assumption that the NWC would strategically use the K-Factor funds collected to reduce costs and improve its revenue inflows. Table 16 below shows the K-Factor and X-Factor percentages approved in the 2013 Determination Notice.

Table 16: Approved K-Factor and X – Factor variables

	Oct 2013 –Sep 2014	Oct 2014 –Sep 2015	Oct 2015 –Sep 2016	Oct 2016 –Sep 2017	Oct 2017 –Sep 2018	Average Annual
K-Factor	14%	14%	14%	14%	14%	14%
X-Factor	0.0%	-5.5%	-9.7%	-12.7%	-15.2%	-4%

6.2 In 2015 September, one year after the implementation of the 5.5% X-Factor, the NWC requested that the X-Factor be reset to zero for the rest of the tariff period. The reasons given for this request were:

- increased operating cost arising from the severe droughts in 2014 and 2015;
- a rise in customer delinquency linked to the 'sluggishness' of the Jamaican economy which has impacted disposable income;
- the application of the GCT on the NWC's electricity bills;
- Insufficiency of available cash to support day to day operations.

6.3 The OUR has considered the NWC's request and has taken the position that the requested zeroing of the X-Factor is not justified. It has also concluded that additional incentives may be needed to encourage the Commission to improve its operational efficiencies. The OUR's analysis of the Commission's proposal is set out below.

Analysis

6.4 Given that the OUR in setting the X-Factor in 2013 was of the view that the targets were achievable, at least three questions may be examined in determining whether the OUR should revisit its determination and set the figure at zero for the rest of the tariff period, as requested by the NWC. They are as follows:

1. Is the NWC at the efficiency frontier?
2. How has the Commission performed against the efficiency targets?
3. Were the drought conditions in 2014 and 2015 so severe that the financial losses suffered by the Commission can only be offset by an exemption from the targeted productivity savings due to customers for the remaining tariff period?

6.5 With respect to the first question, the records show that at 70.7% non-revenue water losses in June 2016, the NWC is a long way from the efficiency frontier. This compares with non-revenue water losses of 45% in Trinidad and Tobago, 35.5% in Uganda and 23.9% in North America . In fairness however, the NWC has not claimed that it is at its efficiency frontier. Consequently, there is no rationale for zeroing of the targeted X-Factor on the basis of superior efficiency.

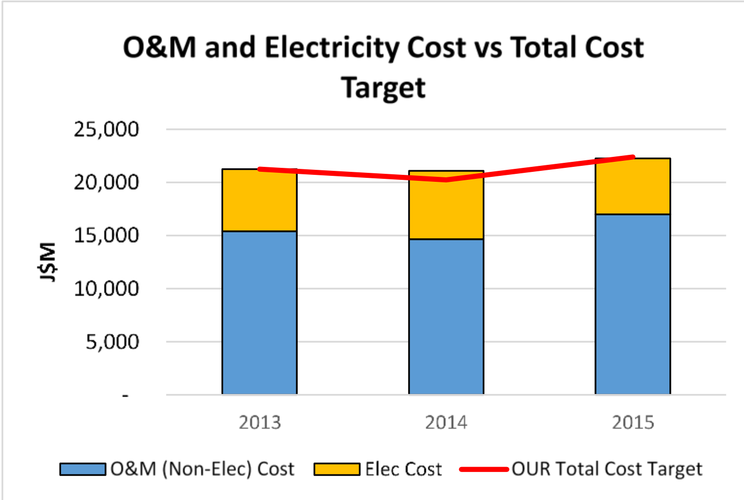
6.6 Notwithstanding, the Commission's operating and maintenance (O&M) cost, revenue outturn and non-revenue water losses should be examined to determine if the Commission's request is reasonable.

Operating and Maintenance Cost

6.7 As shown in Figure 2 below, the NWC's overall O&M cost exceeded the OUR's target by 4.3% in 2014. However, the Commission's overall cost in 2015 was in line with the OUR's target. This is best explained by separating the Commission's electricity costs from its non-electricity O&M cost (see Figure 2):

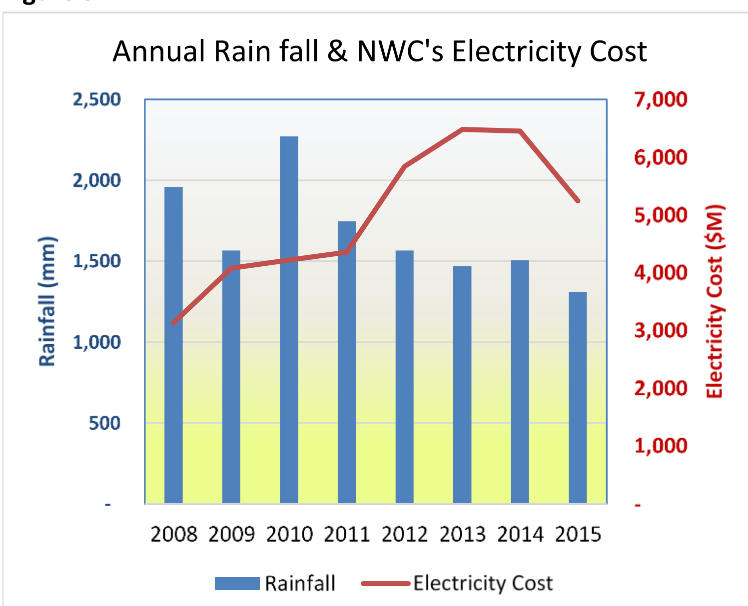
- Non-electricity O&M costs was $865 million or 5.4% higher than the OUR's target; and
- Electricity cost was approximately $1 billion or 15.9% less than the OUR's target.

Figure 2



6.8 One of the factors the NWC cited in explaining its poor financial performance was the drought experienced in 2014, and which worsened in 2015. The annual rainfall in 2015 dipped 13% below the level registered in the previous year (see Figure 3 below). However, despite the deepening of drought conditions in 2015, the Commission's production grew by 2.4%. The data provided by the NWC indicates that the dry conditions in 2015 occasioned the need for third party trucking of water which amounted to $25.8 million.

Figure 3



6.9 On the other hand, plummeting global oil prices resulted in the Commission's electricity expenditure in 2015 declining by $1.2 billion or 18.7% below the previous year's cost (see Figure 3). In that regard, and given the magnitude involved, the relative effect of increased trucking cost and lower electricity cost should have had the net effect of pulling overall O&M cost down by a significant degree.

6.10 It is evident, based upon the extent of the variance for non-electricity O&M expenditure, that the overall cost picture would have been grim had it not been for the favourable impact of plummeting global oil prices on electricity costs.

6.11 While the data provided by the NWC in support of its request for the zeroing of the X-Factor does not rigorously account for the adverse variance in its non-electricity O&M costs, the persistent increase in overtime payments is a cause for concern. Whereas overtime cost for fortnightly employees represented 42.7% of their normal pay in 2013, it moved to 50% and 55.6% in 2014 and 2015 respectively. Over the period, annual fortnightly overtime expenses ranged between $522 million and $654 million.

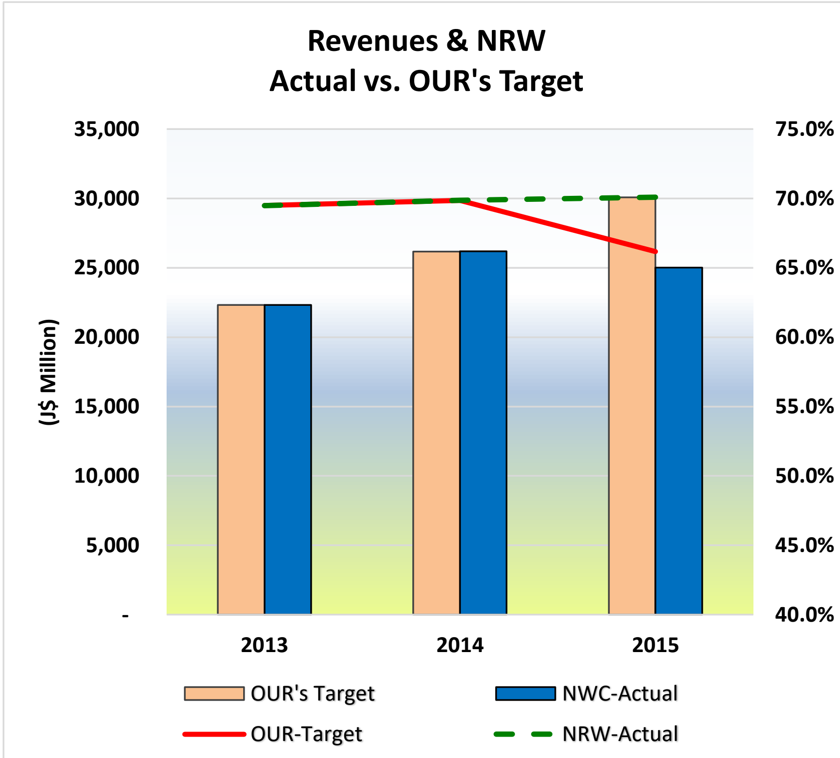
Revenue and Non-Revenue Water Losses

6.12 In 2014, the NWC's revenues were virtually at the same level as the OUR target (see Figure 4 below). However, in 2015 it fell short of the target by 16.8%. The shortfall is largely attributable to two factors: (1) the decline in electricity rates for which the NWC's PAM automatically reduces revenues; and (2) the Commission's ineffectiveness in reducing non-revenue water, since some of the gains, if any in this effort would have translated to greater revenue inflows.

6.13 In addition to the base charges for water and sewerage services, the actual rates paid by customers are determined by a PAM. This mechanism is functionally related to inflation, exchange rate movements and electricity prices. The PAM recognizes that the Commission's costs are sensitive to changes in these price variables that are not under the control of the Commission and provides for the automatic adjustment of customer rates to reflect these realities.

6.14 As previously discussed, falling global fuel prices triggered a reduction in the NWC's electricity costs to the tune of $1.2 billion in 2015 relative to the previous year's expenditure. In response, the PAM made a commensurate adjustment to the Commission's revenue. Consequently, even though the Commission would inevitably experience a reduction in its revenues, the effect on profitability ought to have been neutral provided the Commission kept its non-electricity costs in check.

Figure 4



6.15 Despite the severity of the drought in 2015, the Commission's deviation from the revenue target was not the result of a fall in production. In 2015, the Commission's production exceeded the OUR's projection by 1.4%. Billed consumption, on the other hand, fell short of the target by 10.3%. In this respect, the NWC's revenue gap is primarily explained by its inattention to the reduction of NRW losses. In 2014 its NRW losses were 69.9% and increased marginally to 70.7% in June 2016. As such, the Commission's NRW losses exceeded the OUR target of 62.5% (see Figure 4 above). Indeed, had the Commission achieved its NRW target and two-thirds of that reduction converted to sales, this would have translated to approximately $2 billion of additional revenue. The importance of NRW reduction should therefore be a strategic priority for the Commission.

6.16 It should be noted that the rationale for linking an X-Factor to the K-Factor with a time lag is to provide the Commission with an incentive to aggressively reduce costs and NRW in the earlier years of the regime and then pass on some of this efficiency dividend to rate payers in later years. It was therefore expected that the Commission's capital projects, in most part, would focus on losses which would positively impact revenue inflows. However, it is clear from the level of NRW losses and the NWC's financial performance that the Commission has failed to employ the capital available under the K-Factor Programme to improve its efficiency. Consequently, it is an imperative that the X-Factor be reconfigured to provide a more powerful incentive for action.

Other factors

6.17 In making its argument for the change in the X-Factor, the NWC also contended that it was out of pocket because:

- customer delinquency rates were higher because of a sluggish economy; and
- the introduction of GCT on the NWC's electricity bills has increased its cost.

6.18 The notion that growth, or the lack thereof, has implications for customers paying their utility bills is plausible, although this is admittedly a hypothesis that is yet to be tested in the Jamaican context. Notwithstanding, if the hypothesis is accepted, then contrary to what the NWC has suggested, the delinquency rate among customers should be on the decline. The Jamaican economy has by no means made a great leap forward, yet, over the last three (3) consecutive years both GDP and per capita GDP registered positive growth, with 2015 being the highest.

6.19 Furthermore, the higher delinquency rate identified in the Commission's request is not borne out by the Commission's own statistics. Data provided by the NWC shows the collection rate moving from 83% in 2013 to 92% in 2015. The claim is, therefore, not supported by the reality. On this matter, it is possible that the strengthening of the economy over the last three (3) years could have contributed to the improvement in the Commission's collection rate. However, more importantly the initiative taken by the Commission to improve its collection rate is laudable and it appears to be the main factor behind the positive movement in the delinquency indicator.

6.20 Second, the NWC's assertion that the introduction of GCT on the Commission's electricity bill would render electricity expenses higher is correct. However, in establishing the electricity component in the Commission's PAM, the OUR made allowance for the effects of GCT in the 2013 Determination Notice. Consequently, the claim that the Commission has suffered adversely as a result of the tax paid over to the Government is not valid.

6.21 In this respect, the OUR is of the view that there is no compelling reason for zeroing the X-Factor. Notwithstanding, given the NWC's unresponsiveness to the X-Factor mechanism, the OUR believes that the current incentive structure should be adjusted in a way that heightens the dividends to the Commission for positive action.

6.22 Even though the OUR is cognizant that the droughts in 2014 and 2015 would have put some pressure on the NWC's resources, it also recognizes that the reduction in electricity expenses more than compensated for the fall out. It is clear that the Commission lacks a comprehensive plan to decisively cut costs and address the inefficiencies within its operation.

6.23 Additionally, the NWC attributes its weak revenue performance to developments within the economy. However, this position is unconvincing. The evidence suggests that the failure lies in the Commission's inability to strategically channel K-Factor funds into projects that would have increased its revenue inflows by reducing NRW losses.

6.24 Notwithstanding, the OUR is of the view that the X-Factor mechanism should be modified to ensure that it sufficiently incentivizes non-revenue water loss reduction. The modification of the incentive mechanism, outlined in the Determination below, penalizes the Commission's failure to reduce NRW by further reducing revenues. On the other hand, it rewards positive performance by increasing rates as an investment in further improvements. However, this is a radical short run measure aimed at changing the Commission's orientation to efficiency. The ultimate aim is to claw back the efficiency dividends for consumers in a later period.

Determination

The Office is of the view that the X-Factor mechanism should be modified to ensure that it sufficiently incentivizes non-revenue water loss reduction. The following are the features of the proposed mechanism:

- The X-Factor should be kept at 5.5% for the rest of the review period to stabilize the Commission's current fragile financial position, subject to the following two (2) conditions;
    a) Using 68.5% as a reference point, for every 1% reduction in non-revenue water losses in a given year the X-Factor should be reduced by 1% in the following year.
    b) Using 68.5% as the reference point, for every 1% increase in non-revenue water losses in a given year the X-Factor should be increased by 1% in the following year.

Analysis of the deemed revenue to 87% of billings

6.25 In the National Water Commission Review of Rates – Determination Notice (Document Number WAT 2008/01) dated 2008 May 1 (the "2008 Tariff Determination Notice"), the Office had initially allowed a deemed collection rate of 95% of billed revenues. The Commission later requested in fiscal year 2010/2011 that the Office revises this figure and provided empirical evidence of its then collection rates. Consequently, in fiscal year 2010/ 2011 the deemed collection rate was reduced from 95% to 90%.

6.26 The Commission in its 2013 Tariff Application requested a deemed collection rate of 88.8%. This indicated an anticipated worsening of collections instead of showing some level of improvement. At the same time, the Commission indicated that it had appointed a Vice President with responsibility for losses which "should" mean that revenue collection efforts would increase over the tariff period. The Office, after an analysis of the NWC's operations determined a deemed collection rate of 92% of revenues and encouraged the Commission to implement its revenue collection plans effectively and efficiently in order to achieve this target.

Analysis

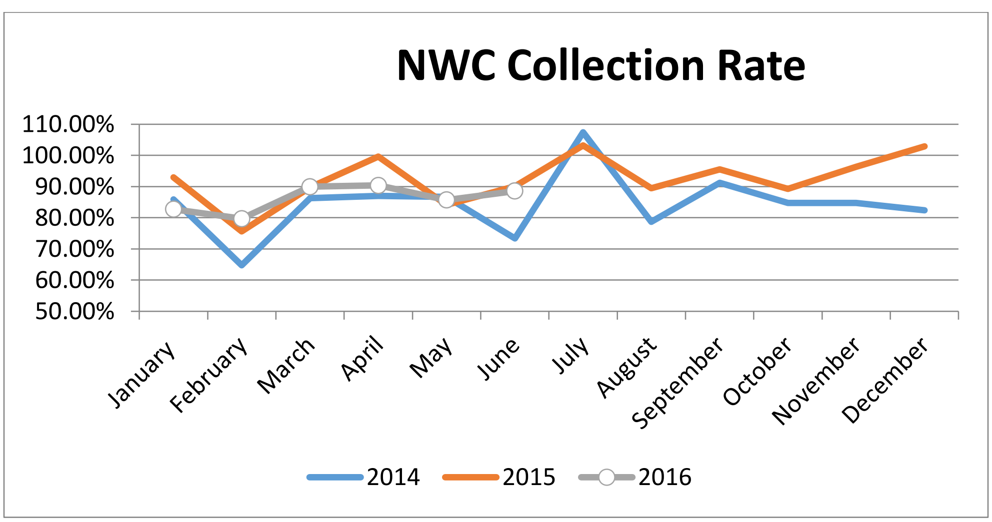
6.27 In its mid-tariff review application, the NWC made a proposal to reduce the deemed collection rate to 87% of billing for the remainder of the tariff period 2016-2018. The NWC presented the OUR with data showing that the average collection rate for the period 2013 October to 2015 September was 86%. The NWC outlined that a 86% average collection rate resulted in the rest of its operations experiencing cash flow constraints since the average collection rate was lower than the deemed collection rate of 92%. The Commission explained that it was "strapped for cash" and would eventually experience cash flow problems in the short term if the deemed collection rate was not adjusted.

6.28 The OUR recognized that the NWC's collection rate fluctuates drastically on a monthly basis. As a result of this, the NWC was asked by the OUR to provide empirical evidence of its monthly collection rate from 2013 to present. The updated information was received by the OUR in the NWC's revised mid-tariff review submission.

6.29 In its analysis, the OUR examined actual monthly collection rates over three (3) years (2013 October to 2016 September). This data was used to calculate the arithmetic mean of the NWC's actual collection rate. During this period, the actual monthly collection rate fluctuated, reaching a maximum of 107.43% in 2014 July and a minimum of 64.72% in 2014 February. The arithmetic mean for the three (3) year period was 88.30%.

Figure 5 below shows the changes in the NWC collection rate over the period 2014 January to 2016 June.

Figure 5: NWC's collection rate 2014-2015



6.30 In order to further analyze the data, the OUR calculated the skewness of the data set. The data was found to be negatively skewed (-0.014) which indicated that there are some below average collection periods (though not significant), that from time- to-time resulted in the Commission collecting below 88% of its bills. These low collection periods however occurred in 2014.

6.31 In 2015, the records showed that only two months reported a collection rate below the three (3) year average of 88%, which would technically mean that there was an improvement in the NWC's collection rate. Three (3) of the six (6) months reported on in 2016, showed a collection rate below average.

6.32 The OUR further calculated the arithmetic mean on a year by year basis since the implementation of the tariff. This was done in order to examine the impact that the Commission's receivables management plan had, if any. The results showed that average collection rates increased from 84.47% in 2013/ 2014 to 89.34% in 2014/ 2015 and was 90.63% in 2015/2016. This clearly shows a year-on-year increase in the NWC's average collection rate.

6.33 The OUR takes the view that it is appropriate to revisit the deemed collection rate as a part of a comprehensive plan to improve the overall efficiencies of the NWC. Notably, on 2015 July 28 the OUR issued a Determination Notice entitled – National Water Commission - Payment Compliance Initiative (Document Number 2015.WAS/003/DET.001), in which the procedures that govern the payment compliance initiative programme were outlined. This programme seeks to provide an incentive to customers who complete their bill payments on or before the due date or impose a penalty on those who make incomplete or no payment by the due date. Since the implementation of this initiative, average collection rates for the NWC have improved. In the fourteen (14) months after implementation, the average collection rate was 90.93%. This suggests that if the Commission implements other collections initiatives, an average collection rate of at least 90% is sustainable.

6.34 The Office is of the view that the current financial and operational position, as reported by the NWC is indeed untenable, and is largely the result of the NWC's operational inefficiencies, buttressed by the discouraging trends in NRW and customer service delivery. In light of the above analysis and the cash constraint being faced by the NWC in its day to day operations, the Office has decided to revise the deemed collection rate to 88% which corresponds with the NWC's mean collection rate for the past three (3) years. Thereafter, the deemed collection rate will be reset at the anniversary of the PAM for the remaining years of the tariff period. Such reset shall be based on a calculation of the mean collection rate for the NWC for the last three (3) years prior to that PAM anniversary. Notwithstanding the foregoing, and so as to allow for reliable inflows of funds into the K-Factor account, no deemed collection rate below 88% shall be approved at any annual reset. This will ensure that the K-Factor Fund will be available to finance the loan obligations of the NWC throughout the period.

Determination

The Office approves a deemed collection rate of 88% for the Commission. This is representative of the mean collection rate for the NWC for the last three (3) years of its tariff.

The deemed collection rate for the NWC will be reset at the anniversary of the PAM to accurately reflect any changes that may occur to the Commission's actual collection rates. The deemed collection rate will be set on the basis of the last three (3) years of collection rate data to be supplied by the NWC at the anniversary of its annual price adjustment and, subject to the limitation set out below, shall be representative of the mean collection rate for the said three (3) years.

Notwithstanding the foregoing, and in order to allow for a reliable inflow of funds to the K-Factor account, the deemed collection rate approved in any year shall not be less than 88% for the remainder of the 2013 – 2018 tariff period.

K- Factor Analysis

6.35 The NWC asserted the following in its submissions regarding the K-Factor:

- The existing inflows into the K-Factor Fund were unable to finance capital expenditure in relation to approved projects for the remainder of the tariff period.
- The expected shortfall was approximately J$2 billion, $3.7 billion and J$7.2 billion for financial years 2016/17, 2017/18 and 2018/19 respectively. This amounted to an expected cumulative shortfall of approximately J$12.83 billion by the end of the tariff period.
- The current reliance of the NWC on K-Factor inflows to fund projects was unsustainable.
- The NWC intended to reduce its reliance on the direct spending approach by seeking to fund capital expenditure projects with a mixture of loans (to be repaid by K-Factor proceeds) as well as PPP.

6.36 Accordingly, the NWC requested the following adjustments to the tariff:

1. Increase the K-Factor to at least 20% (from the existing 14%) for the remainder of the tariff period;
2. Deemed K-Factor inflows should be reduced from 92% to 87% of billed revenue;
3. Extend the K-Factor to include additional projects.

Methodology

6.37 The following approach was taken in assessing NWC's request for the revision of the K-Factor.

- The relevant K-Factor components of the 2013 Determination Notice serve as the background for the review.
- An evaluation was done of K-Factor activities since the implementation of the tariff up to June 2016, the date for which there is the latest available data.
- An analysis of the projections for 2016 July to the end of the tariff in 2018 September and a comparison to the performance since the start of the tariff were carried out.
- The provision of a set of recommendations in relation to the K-Factor for the remainder of the tariff period.

Existing Determination (Background)

Table 17: Applicable K-Factor Projected Inflows and Financing Requirements (as per 2013 Determination Notice)

	2014 (Yr 1)	2015 (Yr 2)	2016 (Yr 3)	2017 (Yr 4)	2018 (Yr 5)	Total J$M
K-Factor	14%	14%	14%	14%	14%	
Billed K-Factor Revenue (OUR Target)	3,663	4,389	5,205	6,109	7,144	26,511
Deemed K-Factor Inflow (92% of Billed Revenue)	3,370	4,038	4,789	5,621	6,572	24,390
NWC Projected K-Factor Expenditure (Approved Project Financing Requirements)	Debt Service (J$M 4,235)					26,033
	Direct Project Spend (J$M)21,798					

6.38 As indicated in Table 17 above, at the start of the tariff period, the NWC projected that debt service payments for existing K-Factor loans and direct financing for existing approved projects, would require a K-Factor financing requirement of J$26.033 billion up to 2018. Notably, the K-Factor as determined in the 2013 Determination Notice is projected to yield J$26.5 billion by 2018. Accordingly, the Office formed the view that the onus is on the NWC to manage its cash flows in terms of how the projects are implemented. The Office also expressed the view that any cash flow differences may be offset if the NWC is successful in its expressed intention to obtain long term loans to fund all existing projects. During the tariff period, the NWC secured a loan of US$12 million from National Commercial Bank Jamaica Limited (NCB) to complete eight (8) wastewater projects.

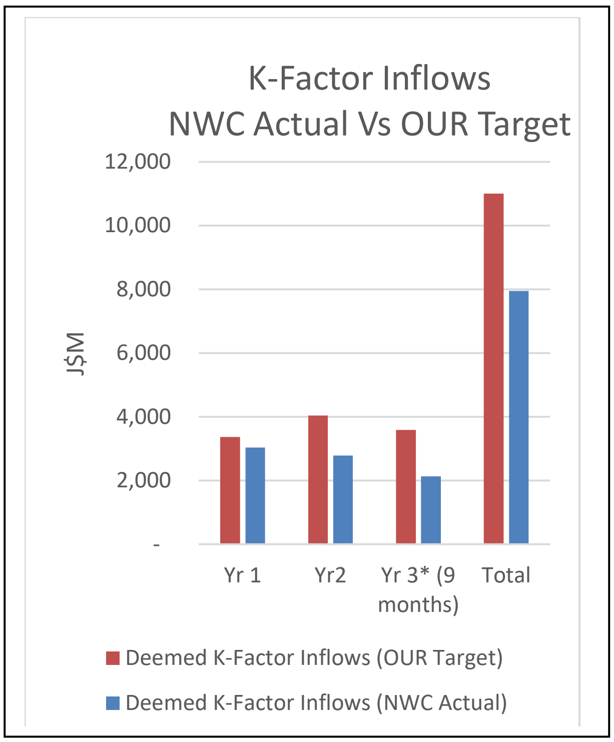
6.39 The Office also reserved the option to approve additional K-Factor projects should the need arise and where the NWC demonstrated meaningful improvement in the returns from K-Factor projects.

Analysis of K-Factor Activities since October 2013

6.40 As evident from Figure 6 below, for the first two (2) years and nine (9) months of the current tariff, NWC's revenues have been consistently below the targets set by the OUR. This difference is due to a number of reasons including the exchange rate movement (U$1:J$89 at the time of tariff setting and was projected to increase to US$1:J$120 by 2018), changes in oil prices and its attendant effect on fuel rates as well as the less than expected reduction in NRW.

6.41 As expected, deemed K-Factor inflows, which is a percentage of revenues, have also run below the OUR's expectations.

Figure 6: NWC Total Revenues and K-Factor Inflows VS OUR Target (Oct 2013-Jun 2016)



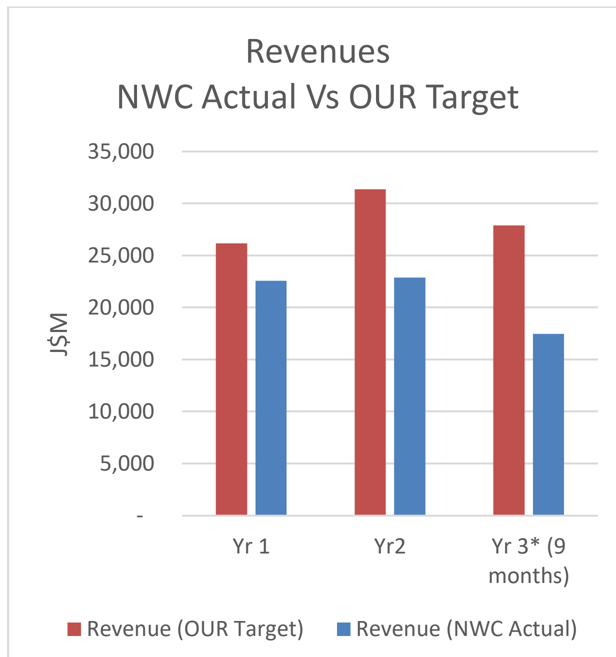


Table 18: Actual K-Factor Outflows and Inflows (October 2013- June 2016)

Details	Yr 1	Yr2	Yr 3*	Total
	J$M	J$M	J$M	J$M
Debt Service	789	1,716	1,240	3,745
Direct Spend	1,925	1,859	1,381	5,165
Total Outflows	2,714	3,575	2,621	8,909
Actual Inflows	3,035	2,787	2,131	7,953
Variance	321	(788)	(490)	
Cumulative (Excess/Shortfall)	**321**	**(467)**	**(957)**	**(957)**

***9 months period Oct 2013-Jun 2016**

6.42 As can be seen in Table 18 above, since the implementation of the current tariff in 2013 October, K-Factor inflows have been outstripped by outflows (direct project spend and debt service) leading to a cumulative shortfall of approximately J$957 million as at 2016 June 30.

6.43 Of note, outflows to service debt have increased by approximately 20% when compared to 2014/15. In the corresponding period outflows due to direct project spend declined by approximately 7%. This may be in part due to the depreciation in the JMD as some of the K-Factor loans are denoted in USD and require payments in that currency.

Table19: K-Factor Projects Status and Expenditure (Oct 2013 – June 2016)

Type	Status	Count	Expenditure (J$M)
Non-Revenue Water (NRW) (A)	Completed	6	4,431
	Ongoing	23	1,344
	Sub Total NRW(A)	**29**	**5,775**
Sewerage (B)	Completed	3	563
	Ongoing	14	3,182
	Subtotal Sewerage (B)	**17**	**3,745**
Non-Revenue Water (NRW) and Sewerage (C)	Completed	1	358
	Subtotal NRW and Sewerage (C)	**1**	**358**
Total Project* Expenditure *(A+B+C)		***47***	***9,878***

6.44 As seen in Table 19 above, under the current tariff, J$9.88 billion has been spent in relation to forty seven (47) K-Factor projects. Ten (10) projects have been completed at a cost of J$5.35 billion. Of these completed projects, six (6) were related directly to NRW reduction with a total expenditure of J$4.43 billion. Additionally, one other completed project also included a NRW reduction component. This means that at least 60% of the projects completed since the start of the tariff related to NRW reduction while accounting for 83% of total expenditure. In order to assess the impact of these projects, a request was made of the NWC to provide data on the impact of these completed projects. The NWC committed to submitting the data on 2016 October 14, however at the time of this analysis, the NWC has not submitted the requested data.

6.45 The Office had set a target for the reduction of NRW during the tariff period from 69.9% to 55% by 2018. It was expected that this would be achieved by the NWC under its own capital expenditure programme, buttressed by the K-Factor projects. The latest available data suggests that NRW for the NWC now stands at 70.7% in 2016 June. This means that despite the seven (7) NRW reduction projects completed under this tariff period, the aggregate NRW for NWC has increased marginally. While this does not necessarily mean that the completed projects did not meet their specific NRW reduction targets in the project area, the net result is troubling.

6.46 Notably, as part of its regulatory work programme, the OUR is in the process of procuring a consultant to conduct a management and operational audit of the K-Factor programme, which among other things will assess the impact and effectiveness of the completed projects. It is expected that this will be completed in 2016 December.

Analysis of Projected K-Factor Activities (2016 July to 2018 September)

Projected Inflows vs Outflows (2016 July – 2018 September)

6.47 In order to assess the NWC's assertion that projected K-Factor inflows would not be sufficient to fund planned expenditure if the K-Factor remains at 14%, the revenue targets for the remainder of the tariff period were revised to account for current conditions in terms of fuel rates, exchange rates and the revenue performance to date.

6.48 As seen in Table 20 below, for the remainder of the tariff period, K-Factor inflows are projected in the amount of J$7.899 billion while outflows are projected to amount to J$18.32 billion, leaving a shortfall of J$10.42 billion.

Table 20: Projected K-factor inflows and Outflows (Jul 2016 - Sep 2018)

Revised Targets	**Yr 3***	**Yr4**	**Yr 5**	**Total**
	J$M	**J$M**	**J$M**	**J$M**
Revenue	6,256	26,698	28,371	61,325
K-Factor	14%	14%	14%	
K-Factor Billed Revenue	876	3,738	3,972	8,586
Deemed K-Factor Inflows (92% of Billed)	**806**	**3,439**	**3,654**	**7,899**
Outflows (NWC Projections)	**(1,271)**	**(9,007)**	**(8,043)**	**(18,320)**
Excess/(Shortfall)	**(465)**	**(5,568)**	**(4,389)**	**(10,421)**

***3 months period Jul-Sep 2016**

6.49 While this level of shortfall is unsustainable at face value, further examination of the planned expenditure is necessary.

Table 21: Breakdown of projected financing Requirements (Jul 2016 - Sep 2018)

NWC Projected Financing Requirements	**Yr 3***	**Yr4**	**Yr 5**	**Total**
	J$M	**J$M**	**J$M**	**J$M**
Debt Service - Existing Loans	346	2,297	3,774	6,417
Debt Service - New Loans	-	1,361	2,089	3,450
Total Debt Service	***346***	***3,658***	***5,863***	***9,867***
Direct Spend - Ongoing	766	640	-	1,406
Direct Spend - Upcoming	159	4,709	2,180	7,048
Total Direct Spend	***924***	***5,349***	***2,180***	***8,454***
Total Financing Requirements	**1,271**	**9,007**	**8,043**	**18,320**

***3 months period Jul-Sep 2016**

6.50 As shown in Table 21 above, for the remainder of the tariff period, debt service is expected to amount to J$9.867 billion while direct project spend is expected to amount to J$8.454 billion. It should also be noted that the significant increase in debt service payments on existing loans observed in years four (4) and five (5) is due mainly to the repayment of an IDB loan of US$133 million that is now out of the moratorium period. The NWC also projected that it would increase its debt service on new loans over the tariff period. However, there was no supporting information on these new loans. In any event, the OUR would have been required to grant NWC permission to undertake additional loans were such loans to be financed by the K-Factor Fund. To date no such permission has been sought by the NWC or granted by the Office.

6.51 Additionally, direct spend on ongoing projects are projected to end by the final year of the tariff period. The NWC is however planning to spend directly from K-Factor inflows an additional J$7.048 billion on upcoming approved projects. This is not consistent with the Office's stated position that the NWC should reduce its reliance on direct financing from inflows and seek loans to finance the projects and use inflows for debt service.

Recommended Treatment of Projected Shortfall

6.52 Since the inception of the K-Factor Programme, the OUR has consistently directed the NWC to utilize the K-Factor inflows as a dedicated source of funds for approved projects. Further to this, the OUR has also been strident in its view that the NWC should seek loans to fund these projects initially and utilize the K-Factor inflows to repay such loans. In this way, the NWC would benefit from the near term impact of these projects on its operations and the dedicated K-Factor inflows would allow the NWC to secure debt at favourable interest rates. It would also be the most efficient way for the Commission to address its serious cash flow difficulties.

6.53 In keeping with this philosophy, it is proposed that for the remainder of the tariff period, the K-Factor be set in such a way that the projected inflows allow the NWC to service existing loans and ongoing projects . Given that the OUR has already granted its approval for these ongoing projects and existing K-Factor loans, it would be imprudent to not allow for their funding. Table 22 below highlights the approved financing requirements to achieve this.

Table 22: Approved Financing Requirements (Jul 2016 - Sep 2018)

Details	Yr 3*	Yr4	Yr 5	Total
	J$M	J$M	J$M	J$M
Debt Service - Existing Loans	346	2,297	3,774	6,417
Direct Spend - Ongoing	766	640	-	1,406
Financing Requirements - Ongoing	**1,112**	**2,937**	**3,774**	**7,822**

***3 months period Jul-Sep 2016**

A total of J$7.822 billion is required to directly fund the ongoing projects and service existing K-Factor debt. In order to achieve this, the K-Factor was derived given the revenue projections referenced earlier.

Approved K-Factor (2016 July to 2018 September)

6.54 As seen in Table 23 below, an average K-Factor rate of 16% for the remainder of the tariff period will match the projected inflows with the financing requirements to complete ongoing projects and service existing debt. Additionally, if the NWC is able to secure loans to fund the expenditure on ongoing projects, it could use the funds earmarked for the direct financing of ongoing projects to undertake other upcoming projects.

Table 23: Summary of approved K-factor (Jul 2016 - Sep 2018)

Details	Yr 3 *	Yr4	Yr 5	Total
	J$M	J$M	J$M	J$M
Revenue	6,256	26,698	28,371	61,325
K-Factor (Approved)	**16%**			
K-Factor Billed Revenue	1,263	3,337	4,288	8,889
Deemed K-Factor Inflows (88% of billed	1,112	2,937	3,774	7,822
Financing Requirements - Ongoing	1,112	2,937	3,774	7,822

***3 months period Jul-Sep 2016**

6.55 The OUR wishes to underscore that the K-Factor Programme as it is currently organized has not achieved the desired outcomes. In light of this, NWC is now being advised that the Programme in its current form will run until the end of the tariff period. In light of this, the NWC as part of its next five year rate review application should undertake a comprehensive review of the Programme and be prepared to propose a modified regime that would be more targeted and fit for purpose. Such a regime should focus on clearly defined and properly scoped projects which will demonstrably have the greatest impact on the NWC in terms of cost reduction or revenue increase. The OUR remains of the view that the high levels of NRW represents a low hanging fruit that the NWC has consistently allowed to fall to the ground and rot.

6.56 NWC in its response to the Draft Determination Notice asked the OUR to reconsider its position on increasing the K-Factor collection to include projects previously approved up to 2018 but not yet started. The Commission referenced its mandate to undertake new capital projects, in particular, the pipeline replacement works linked to the Major Infrastructure Development Project (MIDP). The NWC further requested the OUR to grant approval for MIDP projects to be included under the K-Factor Programme. NWC argued that were the OUR to grant approval for the K-Factor collection to be increased to 20%, this would at least afford the Commission the flexibility to prioritize among approved but not yet commenced projects and the undertaking of the MIDP projects.

The Office remains of the view however that in respect of project approved and not yet commenced, the NWC has not demonstrated in its submission that its mode of operation will ensure that those projects will yield the expected gains in terms of increased revenue or reduced cost. In the circumstances, the Office was not convinced to revisit its initial conclusion. As regards, the MIDP, the Office also takes the position that the current submission does not provide sufficient detail for a proper assessment, review and approval. At the same time, the Office is also mindful of the fact that the Mid-Tariff Review is intended to examine the performance of the NWC in relation to the existing K-Factor Programme since the implementation of the tariff, and not to include the approval of new projects.

6.57 Even so, the Office is willing to review its position on both the matter of projects previously approved and not yet started and the consideration for inclusion of the MIDP project. Such a review however, would need to be informed by a submission in which the projects are clearly defined and scoped, supported by information detailing financing requirements, the funding sources, and the expected impacts and benefits of the projects. NWC may make such submissions for consideration within six (6) months of the issuance of this Determination Notice.

Determination

The Office is of the view that the K-Factor inflows should allow the NWC to fund the repayment of existing loans as well as the direct financing of ongoing approved K-Factor projects.

- The K-factor is set at 16% for the remainder of the tariff period.
- Deemed K-Factor is set at a base of 88%.
- NWC may make further submission on its request to further vary the K-Factor collection and include MIDP projects within six (6) months of the issuance of this Determination Notice.

Special Adjustment to the PAM (Z-Factor)

6.58 The NWC stated that the OUR had in principle approved a Z-Factor in its 2008 Tariff Determination Notice to address risks to which it is exposed, but which were not incorporated in the PAM. The Commission went on to explain that the OUR had indicated that the Z-Factor could be used to compensate events that: affect the Commission's costs, are not due to the Commission's managerial decisions, and are not captured by other items of the price regime. The NWC proposed that the drought experienced in 2014 resulted in the Commission experiencing an increase in its costs that were not planned for. The Commission outlined that water purchase costs and employee's overtime costs all increased during the drought period. The Commission mentioned that there was also some unbudgeted expenditure experienced by restoring and rehabilitating several ground water sources.

6.59 In the 2008 Tariff Determination Notice it was specifically stated that the Office had no objection to applying a Z-Factor for the NWC. It was also stated that the Office believes that in a normal business environment there are some events that are uncontrollable and which may threaten the financial viability of a company. In this case, it would be unfair to ask the Commission to absorb such costs unless there were special provisions made to cover these events. The OUR further outlined that it would issue guidelines on the procedure for activating a Z-Factor provision under a separate proceeding.

6.60 In a preliminary meeting held with the NWC, the OUR outlined that the application for a Z-Factor variable needed a well thought out plan and a proposed methodology as to how this variable would work along with the existing NWC operations. In its revised mid-tariff review submission, although a section of the application proposed allowing a special increase in the PAM to assist in redressing the financial losses experienced by the NWC, the NWC did not present any detailed proposal, clarification or outlined any data in support of its request for the application of a Z-Factor variable.

6.61 The OUR notes that there is no existing framework in the 2013 Determination Notice to support a Z-Factor claim. Furthermore, the NWC's application for a Z-Factor claim has no statistical justification to represent the total loss/increase in costs experienced by the NWC as a result of the drought. Also, the Commission did not explicitly identify distinct components of costs that were associated with the Z-Factor claim. Specifically, simple answers to questions such as, whether uncontrollable costs should be a direct pass through to customers, and if so, the mode by which the Office should determine such costs, remains unclear.

6.62 In order to determine/design a price escalator (Z-Factor) that will compensate the NWC for special circumstances outside its control and affect its costs, the OUR encourages the NWC to thoroughly explore the idea of a Z-Factor mechanism. It would be helpful if the Commission would submit a detailed proposal at the next five (5) year tariff review scheduled for 2018 outlining the various parameters surrounding the implementation of such a Z-Factor provision. The proposal can then be examined closely and be made subject to consultation with interested stakeholders. A study on the impact that drought has had or may have on the NWC's operations should also be explored. This will assist the NWC in assessing whether a Z-Factor variable is necessary, or if some other mechanism, such as a drought fund would be more relevant to the Commission. The idea of developing drought rates that would be applicable in periods of drought may also be explored.

6.63 Notwithstanding, the NWC must recognize that effective drought management starts with both long term and short term planning. It is important for the Commission to have a drought plan describing the action it will take in the event of a drought. The plan should include ways to help reduce the risks of drought and to make sure that water supply remains resilient. This would include:

- Investing in new water sources
- Maximizing river abstraction and conserving reservoir storage
- Transferring bulk supplies between water companies
- Moving water between supply zones to balance the risk
- Planning capital investments for several drought scenarios
- Working with other water companies and abstractors to identify new opportunities to share water

6.64 Demand side measures are also important when planning for a drought. Measures such as:

- Reducing leakages
- Introducing temporary bands
- Reinforcing and introducing water efficiency activities with customers
- Working with large water users to help reduce their demand.

6.65 The Office is aware that the NWC has been practising some of the measures listed above in periods of drought, but planning on a larger scale is needed. The Office recognizes that the NWC cannot do this alone and therefore encourages the Commission to work closely with a wide range of partners including regulators, government, businesses, civil society, investors and the communities which they serve.

Determination

The Office has denied the NWC's request for a price escalator (Z-Factor) to be approved in this Mid-Tariff Review.

Quality of Service Standards Review

6.66 The Quality of Service measures for the NWC fall under two categories, the Guaranteed Standards Scheme and the Quality of Service Performance Targets (2013 – 2018). The Guaranteed Standards are prescribed performance measures that guide the provision of service delivered by the NWC to its customers. Any failure on the part of the Commission to adhere to the Standards results in compensation being paid to the affected customer in the form of a credit to the account. The Quality of Service Performance Targets represent objectives that the NWC commits to meet in its service delivery; however, there is no compensatory payment attached where any of the targets is not met.

6.67 In its effort to ensure that utility customers are continually provided with an acceptable level of service, the Office in the 2013 Determination Notice took the decision to conduct a mid-tariff review of the Guaranteed Standards Scheme. Being cognizant of the implications on the NWC's revenues, this Mid-Tariff Review will not seek to introduce additional automatic standards or increase penalties. However, new standards may be introduced and modifications made to existing performance measures.

6.68 The NWC, in its mid-tariff review submission did not propose any changes to the Guaranteed Standards Scheme. The NWC outlined its performance on the standards for the period 2013 October – 2015 December. From the data submitted, the NWC achieved an average compliance rating of 97% during the review period, which correlates with the quarterly reports submitted by the Commission. While reviews are conducted on the quarterly Guaranteed Standards reports, an assessment of specific Guaranteed Standards is included in the audit of the NWC's billing and metering systems. This is in an effort to get an indication of the accuracy of the NWC's reporting of its performance on the Guaranteed Standards. It is also envisaged that the information obtained from the audit will further assist in identifying the changes that need to be made to the Guaranteed Standard Scheme.

Table 24: Modification/Comments to Existing Guaranteed Standards

CODE	FOCUS	DESCRIPTION	PERFORMANCE
WGS1	Access	Connection to supply	Maximum time of ten (10) working days to connect supply and install meter after establishment of contract. **Compensation type: Claim** **Office Comments: Although the Office recognizes the importance of metered connections, the lack of meters should not**

CODE	FOCUS	DESCRIPTION	PERFORMANCE
			prevent service connection within the specified ten (10) working days.
WGS2	Delivery of bills	Issue of first bill	Maximum time of forty (40) working days after connection of supply and installation of meter **Compensation type: Claim**
WGS3	Appointments	Keeping appointments	Must make and keep an appointment at customer's request and must notify customer within reasonable time prior to the appointed time, if the appointment will not be kept. **Compensation type: Claim** **Modification: Must make and keep an appointment at customer's request and must notify customer at least twenty-four (24) hours prior to the appointed time, if the appointment will not be kept.** **Office Comments: Replacing reasonable time with a specific timeline adds clarity and measurability to the standard.**
WGS 4(a)	Complaints	Acknowledgement	Maximum of five (5) working days to acknowledge customer's written complaints, after receipt. **Compensation type: Claim**
WGS (4b)	Complaints	Investigations	Maximum time of thirty (30) working days from the date of receipt of complaint to complete investigation and respond or provide an update. **Compensation type: Claim** **Office Comments: Where updates are required in lieu of the response, same is to be sent every thirty (30) days until the final response is provided.**
WGS 5	Disconnection	Wrongful Disconnection	Where the NWC disconnects a supply that has no overdue amount or is currently under

CODE	FOCUS	DESCRIPTION	PERFORMANCE
			investigation by the OUR or the NWC and only the disputed amount is in arrears. **Compensation type: Automatic**
WGS 6	Account status	Issue of account status	Meter to be read on same day customer is moving, if on a weekday (within two (2) working days of move if on a weekend) provided five (5) working days' notice of move is given. Maximum time of fifteen (15) working days to provide final bill after move and forty-five (45) days to refund the credit balances. **Compensation type: Claim** **Language Modification:** Meter to be read on same day customer is moving if on a weekday or within two (2) working days of move if on a weekend, provided five (5) working days' notice of move is given. Maximum time of fifteen (15) working days to provide final bill after move and forty-five (45) days to refund the credit balances.
WGS 7	Water meters	Meter installation	Maximum of <u>thirty (30) working days</u> to install meter on customer's request **Compensation type: Claim** **Language Modification:** Maximum of <u>thirty (30) working days</u> to install meter on customer's written request.
WGS 8	Water meters	Repair or replacement of faulty meters	Maximum time of <u>twenty (20) working days</u> to verify and repair or replace meter after defect is identified by, or reported to the NWC. **Compensation type: Automatic**
WGS 9	Water Meters	Changing Meters	NWC must provide customer with details of the date of the change, meter reading on the day and serial number of the new meter. **Compensation type: Claim**
WGS 10	Water meters	Meter reading	Should NOT be more than two (2) consecutive

CODE	FOCUS	DESCRIPTION	PERFORMANCE
			estimated bills (where NWC has access to meter). **Compensation type: Automatic** **Language Modification:** Should NOT be more than two (2) consecutive estimated bills (where NWC has access to meter).
WGS10(b) **(NEW)**	Water Meters	Exceptional Meter Readings	Where the NWC obtains a reading that falls within its exceptions criteria (60% high and 40% low), same is to be verified, the customer alerted upon verification and the reading applied to the customer's account within one (1) billing period. **Compensation Type: Claim**
WGS11	Reconnection	Reconnection after payment of overdue amount	Maximum of twenty-four (24) hours to restore supply. **Compensation type: Automatic**
WGS12	Reconnection	Reconnection after wrongful disconnection	NWC must reconnect a supply it inadvertently disconnected within eight (8) hours of being notified of the error. **Compensation type: Automatic**
WGS13	Compensation	Payment of compensation	Maximum of <u>thirty (30) working days</u> to process and apply credit to customer's account. **Compensation Type: Claim/Automatic**
WGS 14 **(NEW)**	Estimation of Consumption	Method of Estimation	An estimated bill should be based on the average of the last three (3) actual readings. **Compensation type: Automatic**
WGS 15 **(NEW)**	Billing Adjustment	Timeliness of adjustment to customer's account	Where necessary, customer must be billed for adjustment within three (3) months of: (i) identification of error, or (ii) subsequent to replacement of faulty meter **Compensation Type: Claim**

In light of the aforementioned modifications, the following Guaranteed Standards set out in Table 25 below become effective 2016 December 5**.**

Determination
The Guaranteed Standards set out in Table 25 become effective **2016 December 5.**

Table 25: Adjusted Guaranteed Standards

CODE	FOCUS	DESCRIPTION	PERFORMANCE
WGS1	Access	Connection to supply	Maximum time of ten (10) working days to connect supply and install meter after establishment of contract. **Compensation type: Claim**
WGS2	Delivery of bills	Issue of first bill	Maximum time of forty (40) working days after connection of supply and installation of meter **Compensation type: Claim**
WGS3	Appointments	Keeping appointments	Must make and keep an appointment at customer's request and must notify customer within twenty-four (24) hours prior to the appointed time, if the appointment will not be kept. **Compensation type: Claim**
WGS 4(a)	Complaints	Acknowledgement	Maximum of five (5) working days to acknowledge customer's written complaints, after receipt. **Compensation type: Claim**
WGS (4b)	Complaints	Investigations	Maximum time of thirty (30) working days from the date of receipt of complaint to complete investigation and respond or provide an update. **Compensation type: Claim**
WGS 5	Disconnection	Wrongful Disconnection	Where the NWC disconnects a supply that has no overdue amount or is currently under investigation by the OUR or the NWC and only the disputed amount is in arrears. **Compensation type: Automatic**
WGS 6	Account status	Issue of account	Meter to be read on same day customer is moving if on a weekday or within two (2)

CODE	FOCUS	DESCRIPTION	PERFORMANCE
		status	working days of move if on a weekend, provided five (5) working days' notice of move is given. Maximum time of fifteen (15) working days to provide final bill after move and forty-five (45) days to refund the credit balances. **Compensation type: Claim**
WGS 7	Water meters	Meter installation	Maximum of <u>thirty (30) working days</u> to install meter on customer's written request **Compensation type: Claim**
WGS 8	Water meters	Repair or replacement of faulty meters	Maximum time of <u>twenty (20) working days</u> to verify and repair or replace meter after defect is identified by, or reported to the NWC. **Compensation type: Automatic**
WGS 9	Water Meters	Changing Meters	NWC must provide customer with details of the date of the change, meter reading on the day and serial number of the new meter. **Compensation type: Claim**
WGS 10	Water meters	Meter reading	Should NOT be more than two (2) consecutive estimated bills (where NWC has access to meter). **Compensation type: Automatic**
WGS10(b) **(NEW)**	Water Meters	Exceptional Meter Readings	Where the NWC obtains a reading that falls within its exceptions criteria (60% high and 40% low), same is to be verified, the customer alerted upon verification and the reading applied to the customer's account within one (1) billing period. **Compensation Type: Claim**
WGS11	Reconnection	Reconnection after	Maximum of twenty-four (24) hours to restore

CODE	FOCUS	DESCRIPTION	PERFORMANCE
		payment of overdue amount	supply. **Compensation type: Automatic**
WGS12	Reconnection	Reconnection after wrongful disconnection	NWC must reconnect a supply it inadvertently disconnected within eight (8) hours of being notified of the error. **Compensation type: Automatic**
WGS13	Compensation	Payment of compensation	Maximum of thirty (30) working days to process and apply credit to customer's account. **Compensation Type: Claim/Automatic**
WGS 14 **(NEW)**	Estimation of Consumption	Method of Estimation	An estimated bill should be based on the average of the last three (3) actual readings. **Compensation type: Automatic**
WGS 15 **(NEW)**	Billing Adjustment	Timeliness of adjustment to customer's account	Where necessary, customer must be billed for adjustment within three (3) months of: (i) identification of error, or (ii) subsequent to replacement of faulty meter **Compensation Type: Claim**

Compensation Mechanism

Compensation for breaches of the Guaranteed Standards shall remain as previously determined in the 2013 Determination Notice. They are as follows:

General Compensation

6.69 The Office has determined that the compensation for breach of a Guaranteed Standard will be four (4) times the applicable service charge.

Special Compensation

6.70 In the case of Reconnection after payment of Overdue Amounts, Wrongful Disconnection and Reconnection after Wrongful Disconnection, the compensation will be six (6) times the applicable service charge.

6.71 Where applicable, customers must submit claims within one hundred and twenty (120) working days after the breach is committed.

6.72 Breaches of individual standards will attract compensation of up to six (6) periods of non-compliance. For clarity, where a standard is breached and is not remedied within the stipulated time, compensation is to be applied to the affected account for that particular breach for up to six (6) periods within which it goes un-remedied. The stipulated timeline for each breach is to be used to determine the periods of non-compliance.

Issues Relating to Policy Development

6.73 The Office has noted the NWC's submission of the extract from its Commercial Operations Policy Manual setting out its proposed policies on: Trucking of Water to Customers, Disconnecting Accounts for Non-Payment, Reconnection of Supplies Disconnected for Non-payment and Illegal Connections. These policies will require consultation, following which, feedback will be provided to the NWC to facilitate finalization, approval and implementation of the policies. The consultations will take place outside of this Mid-Tariff Review. It is envisioned that the review of these policies will be completed in this tariff period.

Determination

The Office will review and conduct a consultation on the draft policies submitted by the NWC on Trucking of Water to Customers, Disconnecting Accounts for Non-Payment, Reconnection of Supplies Disconnected for Non-payment and Illegal Connections outside of this Mid-Tariff Review. It is intended that this will be completed prior to the next tariff period.

7 Regulatory Impact Analysis

7.1 Based on the determinations made in this Mid-Tariff Review regarding the NWC's operations, Table 26 below shows the impact of the changes on customer's bills for the various levels of consumption.

Table 26: Typical Residential Customer bill with water and sewerage service

	Details	Current bill	Details	New bill	Change
14000 litres					
Service Charge		$758.18		$758.18	
Water charge		$1,330.56		$1,330.56	
Sewerage charge		$1,207.64		$1,207.64	
PAM	Assumed	$47.14	Assumed	$47.14	
X- Factor	5.50%	($183.89)	5.50%	($183.89)	
K-factor	14%	$442.35	16%	$505.54	
Total bill		**$3,601.97**		**$3,665.36**	**2%**
32,000 litres					
Service Charge		$758.18		$758.18	
Water charge		$4,413.98		$4,413.98	
Sewerage charge		$4,005.96		$4,005.96	
PAM	Assumed	$47.14	Assumed	$47.14	
X- Factor	5.50%	($507.39)	5.50%	($507.39)	
K-factor	14%	$1,220.50	16%	$1,394.86	
Total bill		**$9,938.37**		**$10,112.73**	**2%**

Operational Impact

7.2 The objectives of the K-Factor Programme remains targeted at addressing specific rehabilitation programmes designed to reduce the impact on the environment and improve efficiency. Due to the shortfall in the K-Factor inflows necessary to finance existing projects, the moratorium placed on the approval of new projects remains intact. This will ensure that the Commission completes all existing projects important for the reduction of NRW. An improvement of the level of NRW will lead to lower operational costs and an increase in the availability of water supply being demanded by the Commission's customers.

7.3 The wastewater treatment plants that are in need of repair will also be addressed by utilizing the K-Factor funds. The expansion of the collection network for sewerage in

KSA will seek to increase revenues and lower the per unit cost of treating sewage at the Soapberry plant.

Environmental impact

7.4 Non-functioning wastewater treatment plants are a direct health hazard as untreated effluent is oftentimes discharged close to highly populated areas. In addition, damage to Jamaica's coastal environment may be permanent and as such may have a deleterious impact on the tourism product, if left unchecked. The K-Factor financed programme for the rehabilitation of sewerage plants will continue for the remainder of the tariff period. The NWC has suggested improving / upgrading a number of these projects.

Gender impact

7.5 Women are more affected by the lack of access to adequate water supply than men as they are the ones more likely to do the fetching from rivers to carry out domestic functions and other special needs for proper sanitation. An increased capacity of the NWC to carry out expansion programmes and to adequately serve existing customers will enhance the welfare of women. The new tariff provides the NWC with a greater level of financial sustainability while the NRW programme will recover additional capacity to serve new areas.