Office of Utilities Regulation

National Irrigation Commission

Review of Irrigation Rates for Colbeck and New Forest/Duff House Irrigation Schemes

Determination Notice

OFFICE OF UTILITIES REGULATION

June 5, 2013

DOCUMENT TITLE AND APPROVAL PAGE

1. DOCUMENT NUMBER: 2013/WAS/002/DET/001

2. DOCUMENT TITLE: National Irrigation Commission: Review of Irrigation Rates for Colbeck and New Forest/Duff House Irrigation Schemes Determination Notice.

3. PURPOSE OF DUCUMENT

This Document sets out the Office's Decision on National Irrigation Commission's Application for Irrigation Rates for Colbeck and New Forrest/Duff House Irrigation Schemes

4. RECORD OF REVISIONS

Revision Number	Description	Date

5. APPROVAL

This Document is approved by the Office of Utilities Regulation and the Decisions therein become effective on **June 24, 2013**.

On behalf of the Office:

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Maurice Charvis
Director General

June 5, 2013

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Executive Summary

The National Irrigation Commission (NIC) has undertaken several programmes, as part of the National Irrigation and Development Plan (NIDP) project, geared towards rehabilitating existing irrigation infrastructure and building new irrigation networks. The New Forest/Duff House, Colbeck, and Yallahs irrigation schemes are three newly built networks and are expected to serve farmers in sections of St. Catherine, Manchester and St. Thomas respectively.

The Colbeck irrigation scheme comprises a subdivision of 92 farm lots on 110 hectares of land located in Old Harbour, St. Catherine. The irrigation system is comprised of new wells, pumping stations and conveyance pipeline systems.

The New Forest/Duff House Scheme was commissioned into operation on March 30, 2013 to provide a consistent and stable water supply system to approximately 497 farmers.

It is envisaged that the NIC will operate these systems in the initial stages of the project. During this stage the NIC will spearhead training for members of the Water User Associations (WUAs), so that the WUAs can assume responsibility for the system in the long term.

Eighty percent (80%) of the cost of the Colbeck project was funded by the Inter-American Development Bank (IADB). Twenty percent (20%) was funded by the Government of Jamaica (the Government). The Colbeck Water Users' Association Irrigation Specially Authorised Society contributed approximately $5.7M in value which includes land on which the Colbeck building was constructed, easement and labour. The Government of Jamaica has indicated that its policy is that the rates charged for the service must be reflective of costs.

On December 17, 2012 the NIC submitted a rate application to the Office of Utilities Regulation (Office/OUR) requesting that Non-WUA members pay the economic cost to produce water and that members of the WUA be charged a subsidized rate for the service. The NIC also requested that the rates proposed for the Colbeck Irrigation Scheme be applied to New Forest/Duff House Scheme as an interim rate until that project is completed.

During public consultation, the NIC further advised that the proposed rates for members of the WUA would not cover its full operating cost but are just enough to recover the cost of electricity for providing the service.

NIC proposed the following tariff structure:

Members of the WUA	
Meter Charge	$490.50
Flat Fee first 20 cu. Metre	$700.00
Next 50 cu. Metre	$38.00 per cu.
cu. Metres > 70 cu. Metre	$28.50 per cu.
Reconnection Fee	$2,800
Non- Members of the WUA	
Meter Charge (Commercial)	$1180.00
All Quantities	$189.00 per cu.
Reconnection Fee	$3100

By way of correspondence dated January 11, 2013, NIC also requested that provision be made for an annual rate adjustment for inflation in the price mechanism.

Public consultations were held with farmers of Colbeck on February 5, 2013, and with New Forest/Duff House on February 7, 2013. The farmers highlighted as their main concern the drastic increase in the rates due to the high energy cost. They also enquired about the mechanism that the NIC will put in place to reduce energy cost to the end-users.

The Office, having examined the application and supporting documents and given due consideration to the comments of interested parties, has approved three categories of rates and charges, viz:

1. Rates for recovery of full costs (economic rates);

2. Subsidized rates reflecting only partial recovery of capital expenditure; and

3. Rates for recovering the costs of electricity only.

After reviewing the NIC's application the Office has determined the rates set out in Table 1.

Table 1: Office Determined Monthly Approved Rates and Charges

Type	**Economic Rate**	**Subsidized Rate**	**Electricity Recovery Rate**
Service Charge	$2,261per hectare	$490.50 flat charge	$490.50 flat rate
Volumetric Charge	$141.34/M^3	91.29/M^3	$44.21/M^3

Reconnection fee of $2,800 for members of the WUA, and $3,100 for Non-Members are approved.

The Office has determined that it will not approve a price adjustment mechanism in this review.

The Office has determined that the rates are effective June 10, 2013 and will be for a period of at least fifteen (15) months. NIC is required to inform farmers prior to the implementation of the new rates.

The NIC must submit at least one (1) set of audited financial statement prior to the Office's review of these rates.

Chapter One: Overview

1.1 Regulatory Framework

The OUR is a multi-sector regulatory agency which was established in 1995 by the Office of Utilities Regulation Act ("the OUR Act"). Section 4(1) of the OUR Act specifies the functions of the Office. Pursuant to Section 4(1) (a) of the OUR Act, the OUR has regulatory authority over prescribed utility services. "Prescribed utility services" is defined in the First Schedule of the OUR Act as the telecommunications, electricity, water and sewage and the transportation (road, rail and ferry) sectors.

1.2 Section 4(4) of the OUR Act provides:

"*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."*

1.3 Pursuant to Section 12(1) of the OUR Act, a licensee may make an application for proposed rates to the OUR in respect of a prescribed utility services. Section 12(1) of the OUR Act reads as follows:

"*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).*"

1.4 The Office pursuant to Section 11(1) of the OUR Act is empowered to consider the proposed rates and prescribe the rates to be charged by a licensee in respect of its prescribed utility service. Section 11(1) of the OUR Act reads as follows:

"*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 (I) 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.*"

1.5 The NIC is currently responsible for the operation of irrigation systems. The NIC has undertaken several programmes, as part of the National Irrigation and Development Plan (NIDP) project, geared towards rehabilitating existing irrigation infrastructure and building new irrigation networks.

1.6 The OUR in considering the NIC's application for a review of irrigation rates must have regard to the Government's Water Sector Policy Strategies and Action Plan, (2004) (the Policy). The Policy recognises the importance of water for irrigation purposes and the impact that it has on rural development. The Policy speaks to an objective of ensuring that the provision of water for agricultural purposes is done:

- In a cost-effective and efficient manner;
- In a manner to facilitate sustained social and economic growth and development; and
- Through encouraging farmers to participate in the management and distribution of the irrigation water.

1.7 Background

The Government and the IADB, through the NIDP, have collaborated to construct new irrigation infrastructures in Colbeck, Yallahs and New Forrest/Duff House at a cost of US$21M. These irrigation projects were developed to increase the efficiency and effectiveness of irrigation networks while extending the system to new farmers.

1.8 This initiative is expected to support farmers' economic activities through training and marketing techniques aimed at enhancing the performance of their agricultural business.

1.9 It is envisaged that the NIC will operate these systems in the initial stages of the project. During this stage the NIC will spearhead training for members of the Water User Associations (WUAs), so that the WUAs can assume responsibility for the system in the long term.

1.10 Colbeck System

The Colbeck Irrigation Scheme is situated on 110 hectares of land located in Old Harbour, St. Catherine, comprising a subdivision of 92 lot farmers. The system is outfitted with a production well of capacity 1.2 million US gallons

per day, well pumping equipment including turbine, motor and switchgear, piping network including water meters, valves and an office outfitted with furniture.

1.11 New Forest/Duff House System

The New Forest/Duff House Scheme was commissioned into operation on March 30, 2013 to provide a consistent and stable water supply system to approximately 497 farmers.

Chapter Two: NIC's Proposal

2.1 Introduction

On December 17, 2012 the NIC submitted an application to the OUR for the Colbeck, Yallahs and New Forest/Duff House Schemes requesting:

- A determination of the economic rate for non-WUA customers; and
- A determination on an interim electricity recovery rate to be charged to members of the WUA customers.

Due to the unavailability of essential data needed to conduct the tariff review, the OUR and the NIC have been in dialogue resulting in the NIC submitting the final data requirement on March 19, 2013.

2.1.1 The NIC later withdrew its application for the Yallahs Scheme. It also indicated that the New Forest/ Duff House scheme is not yet completed and therefore data on farmers' operations in that project area is inadequate to develop a tariff proposal. Thus, the NIC requested that the Colbeck rates be applied in the interim to New Forest/Duff House. During the public consultation, NIC suggested that the Colbeck electricity rates would be lower than that of New Forest and therefore would not be reflective of true electricity cost. However, the Colbeck rate could be considered as an interim rate.

2.1.2 Similar to the Seven Rivers, Beacon/Little Park and Hounslow projects, the Colbeck and New Forest/Duff House irrigation schemes, in the initial phase, will be operated by the NIC but ownership will eventually be transferred to the WUA after the members have received adequate training on how to operate the irrigation systems. At that time, it is expected that the NIC's role would be reduced to providing advisory and technical support.

2.2 Proposed Costs

The NIC in its application indicated the costs for the Colbeck scheme outlined in Table 2 below.

Table 2: Proposed costs for the Colbeck Scheme

Full Cost Recovery (economic cost)	$US
Loan Balance	89,997.00
Amortization	25,789.00
Interest[1]	14,700.00
Payment	40,489.00
Rate of Return 14% (net asset)	67,594.00.00
Annual Maintenance Fund	8,272.00
NIC Apportionment	25,476.00
Production Cost[3]	51,363.00
Billing and Admin.	16,050.00
Full Annual Economic Cost	**216,579.00**
Full Annual Economic Cost/m³ (US$)	**2.10**
Full Annual econ. Cost/m³ (J$) Non – WUA[1] users	**189.43**
Projected Sales volume	102,900.00
* Annual water production	147,240.00

2.2.1 The rate-of-return is set at 14% of net assets. The NIC states that in the absence of a set of financials for Colbeck, net fixed asset is used as a proxy for total fixed asset. Net asset proposed is $US 482,813.

The volumetric charge is derived from dividing the total economic cost by the volume of water to be sold.

2.2.2 The annual maintenance fund is set at 2.5% of loan balance and is apportioned evenly over twelve years.

2.2.3 The Apportionment of NIC administrative and operating costs is based on the ratio of the schemes output to total production. The 2014 cost is adjusted for the cost associated with the operation of Colbeck.

[1] Exchange rate used is US$1:$J90

2.2.4 The NIC also proposes to have an indexing mechanism that will capture annual rate adjustment for inflation.

2.2.5 An estimated pumped volume between 11,560m^3 and 12,270m^3 is calculated by the NIC. The NIC uses the higher of the two in their proposal which resulted in total annual water production of 147,240M^3.

2.3 Projected customer base

The NIC indicated that the total customer base for the Colbeck scheme as at December 2012 was forty-seven (47). The Commission has projected that on average five (5) new customers will be added in each quarter.

2.4 Proposed Tariff Structure

The proposed Tariff Structure is outlined as follows:

Members of the WUA	Amount
Meter Charge	$490.50
Flat Fee 20 cu. Metre	$700.00
Next 50 cu. Metre	$38.00
Per cu. Metre > 70 cu. Metre	$28.50
Reconnection Fee	$2,800.00
Non-Members of the WUA	
Meter Charge (Commercial)	$1,180.00
All Quantities per cubic meter	$189.00
Reconnection Fee	$3,100.00

2.4.1 NIC states in its application that the meter charge is aimed at making a contribution towards direct administrative costs such as, billing and NIC's administration. However, at the consultations they further added that a portion of the meter charge will be used to recover capital cost.

2.4.2 In a meeting with the OUR, the NIC indicated that the $490.50 proposed for meter charge to members of the WUA was derived through a general agreement with the farmers at Colbeck.

2.4.3 No justification was offered for the volumetric tiers proposed or the inputs drivers that were used to derive them.

2.5 Contribution to Capital Cost

The June 2009 agreed methodology for cost recovery, which was a condition precedent to the disbursement of the loan to Government through the NDIP project by the IADB provides that a portion of capital cost should be borne by the Colbeck Water Users' Association Irrigation Specially Authorized Society. This portion should not exceed **twenty percent (20%)** of the net margin from the farmer's production. According to the June 2009 Memorandum of Understanding between the NIC and three WUA groups (including Colbeck and New Forest/Duff House ("June 2009 MOU") the payment shall have a moratorium of six (6) years commencing after the Colbeck Water Users' Association Irrigation Specially Authorized Society assumes full responsibility for the scheme.

2.5.1 However, the NIC in its submission asserts that it is the general consensus that the original methodology has internal contradictions and is not ideal for the current circumstance in the project areas as the net margin for farmers are not known. The NIC is proposing an alternative methodology for capital cost recovery. The NIC suggested that the capital cost of $46.42M with an interest rate of 6.1% and a twenty (20) year loan repayment period will be paid by non-WUA members. The figure proposed for the payment toward capital cost is US$40,489.00.

Chapter Three: Public Consultations

3.1 In an effort to provide customers of the NIC with an opportunity to discuss and give feedback on NIC's application regarding the proposed rates, the Office planned three (3) public consultations. The consultations were arranged for Colbeck, located in Old Harbour – St. Catherine; New Forest/Duff House, located in Manchester and Yallahs, located in St. Thomas. Only two meetings were held as the Yallahs application was withdrawn by the NIC.

3.2 Approximately forty (40) members of the WUA attended the meeting held in Colbeck, while the New Forest/Duff House meeting had approximately one hundred (100) persons in attendance including non-WUA members. The major concerns that were raised by the farmers at the meetings are summarised below:

3.3 Alternative Energy Sources

Concern: Farmers noted from NIC's presentation that the highest operating cost was energy supplied from the Jamaica Public Service Company Limited (JPS). They were therefore interested in knowing whether consideration was being given for the use of alternative energy source, such as solar energy, so as to reduce the operating cost.

Response: The NIC advised that currently, the system is operated by an inductive motor, which is known for its high energy usage. It argued that any alternate energy source that would be able to provide the amount of energy required to drive the pump would be very costly. The NIC further advised that with the significantly high cost to install the appropriate solar system, it is currently cheaper to take the energy from the JPS. The NIC stated however that it was exploring the feasibility of wind energy as an appropriate alternative source. The research is expected to be completed within a year and is anticipated to, if implemented, drive costs down for the farmers.

3.4 Preventing Waste of Water

Concern: Farmers questioned whether provisions can be made to store the pumped water so that any possibility of waste of both water and the energy used to pump same can be alleviated.

Response: The Commission acknowledged that there is some amount of waste and agreed that a storage facility could add value but that this would be at an increased cost to the farmers at this time. NIC however noted that this would be a

consideration in future tariff models. The NIC further advised that to treat with any waste and improved efficiency, the entity is considering the option of reducing the capacity of the pump to one that will more adequately meet the demand and also to install variable speed motors.

3.5 Provision for members of the WUA to operate the irrigation system

Concern: Farmers pointed out that there was no provision in the presentation made by the NIC for the WUA to take over the operations of the system so as to reduce operations and maintenance costs thereby reducing the overall costs to the end-user.

Response: The NIC stated that irrespective of who operated the system, a rate to recover energy costs and operating and maintenance costs must be determined. If the energy costs were not paid, then the system could not be operated as the entity would have no means by which to produce and distribute water to the farmers.

Specific to the takeover process, the NIC advised that there will be a period of joint management of 5-6 years between the NIC and the WUA before takeover by the latter. The NIC further stated that as a part of the process, the WUA must nominate two (2) persons from its membership to aid with the management of the system.

3.6 Meter Charge

Concern: Farmers were interested in knowing whether the meter charge will be billed monthly irrespective of usage.

Response: NIC advised that the meter charge is similar to a fixed service charge and will be billed monthly.

3.7 Quantity and Reliability of Water

Concern: Farmers were interested in knowing whether consideration was given to the quantity of water needed by farmers, and whether the NIC is able to guarantee supply during periods of drought.

Response: The NIC advised that an extensive study was conducted to determine the amount of water that would be required by various crops on a monthly basis. The NIC also advised that drought conditions should not adversely affect supplies to farmers as the purpose of an irrigation system was to ensure a constant supply of water.

3.8 Titles

Concern: The farmers pointed out that the majority of them do not have titles for their properties which created a serious challenge in starting up their operations. They further lamented that they have had extensive discussions with the National Land Agency (NLA), but the matter remains unresolved.

Response: The NIC pointed out that it was not involved in the issuance of titles; notwithstanding, the NIC acknowledged that the success of the project was hinged on effective collaboration among the various government agencies. Accordingly, the farmers were advised to seek assistance from the WUA, and where possible, the NIC would also try to assist them.

3.9 Back-up System for Pump Failure

Concern: The farmers enquired whether there was a backup system in the event of pump failure.

Response: The NIC informed that the system was so designed that in the event of a pump failure, water can be rerouted to farmers.

Chapter Four: Office Evaluation of Application

4.1 Introduction

As part of its application the NIC stated that it intends to provide non-farmers with irrigation water and in this regard, the Office considered its application for an economic rate for this category of customers. Further, the NIC sought approval of a subsidized/recovery rate developed for farmers who are members of the WUA. During its presentation at the public consultations the NIC indicated that it at the least required an interim rate to cover the cost of electricity. The Office's evaluation is done within this context.

4.2 Rate Structure

The NIC proposed two different tariff structures for its two main customer classes, that is, WUA members and non-WUA members. It sought the OUR approval for a three-part tariff structure for WUA farmers. This structure consists of a fixed meter charge, a flat demand charge for up to $20m^3$ and a two-tier volumetric charge. The tariff structure proposed for non-WUA members is a flat meter charge and a volumetric charge per cubic metre.

4.2.1 During the analysis of the rate application, it was observed that the NIC did not provide reliable data to support the development of a tiered tariff structure.

4.2.2 Additional data submitted also proved insufficient to justify the results of the given tiered structure and would result in under or over-recovery of the revenue requirement needed to operate the system. It is suggested that if the NIC wishes to develop a tiered system for the Colbeck scheme at least two (2) years data on consumption patterns is needed.

4.2.3 Given the insufficiency of the data supplied, the proposed rate structure, that is, allowing two fixed charges, viz. a fixed meter charge of $490.50 and a volumetric charge of $700 for up to $20M^3$ was adjusted. The NIC in a meeting with the OUR stated that the agreement between the farmers and the NIC is for a fixed service charge not exceeding $500.00 in the short term, as that represented the amount the farmers can afford to pay. The tariff structure for members of the WUA was therefore adjusted to reflect a single flat meter charge and a volumetric charge per cubic metre.

4.3 Cost Analysis

In analysing the costs for Colbeck, the Office used actual operating costs for the scheme over the period November 2011 to November 2012[2] and projections for 2013 costs in line with forecasted economic conditions. Future projections were also applied to costs that are likely to change over the fifteen (15) month tariff period.

4.3.1 Total Administration Cost

In its proposal, the NIC states that the apportioned Overheads/Administrative cost is US$25,476. It outlined that this apportionment is based on the ratio of the schemes output to total production.

Staff Costs

Additional data received from the NIC shows that an estimated $J1.31M is projected for total wages and salaries annually. This provision accounts for: a Regional System Manager, one System Operator, a Systems Supervisor and an Operations Director. Additional staff cost of $98,113.68 representing payment for two (2) members of staff in the IT department and two (2) members in the finance department were also proposed. Total staff cost proposed is therefore $1.41M.

The Office has no objection to the staff costs proposed. Using this total it has therefore projected staff cost for the fifteen (15) month tariff period at $1.763M.

4.3.2 Repairs and Maintenance Cost

The NIC indicates in the calculation of an economic rate for non-WUA members that a provision of $US8,272 per year is made for repair and maintenance of irrigation infrastructure. This figure is calculated at 2.5% of loan balance spread evenly over 20 years.

The Office accepts that there will be deterioration of the pipeline over time and accepts the view that a general provision for repair and maintenance should be made. Given that there is only one year data for repair and maintenance expenses that is available, the Office will agree on the figure proposed but will adjusted this to reflect the projected inflation of 8% per annum. NIC outlined that total repair and maintenance costs incurred for Colbeck over the period November 2011 to November 2012 was $1.049M. Total allowed repair and maintenance cost is therefore $1.13M for the fifteen-month period.

[2] Costs received from the NIC along with other future estimated operating cost.

4.3.3 Electricity

The NIC outlined that the electricity charges is one of the most significant cost in the operation of its irrigation schemes. This estimate is based on historic data, reasonably assumed increases in components of the energy charge and, usage projections. The constituents of the energy charge are as follows:

i. Demand Charge

This is determined by demand in Kilo Volts Ampere (kVA) multiplied by the applicable rate. In estimating future demand charges, the maximum kVA demand registered to date (based on bills submitted) was used. The current rate is to be applied until the end of the present JPS tariff adjustment period: June, 2013. Thereafter, an increase of 5% is assumed.

ii. Energy Charge

This is determined by multiplying the Kilowatt hour (kWh) usage by the applicable rate (in J$/kWh). It is projected that a volume of 120,480.8m^3 will be pumped in 2013 and 147,000m^3 in 2014. These are consistent averages of 10,040.07m^3 and 12,250m^3 per month in 2013 and 2014 respectively. Based on 2012 data supplied by NIC, an average of 0.58kWh is used for each cubic meter pumped. Monthly kWh usage is therefore projected to be 5,823kWh and 7,105kWh in 2013 and 2014 respectively. Similar to the demand charge, the current per kWh energy charge will remain until June, 2013 and a 2% increase is assumed thereafter. This increase is based on previous trend in energy charge over the past two years.

iii. Customer Charge

This is a fixed monthly charge per tariff adjustment period. For the purpose of estimating future charges, it is kept at the current figure until June, 2013 with a 5% increase assumed thereafter, this increase is based on current changes in customer charges over the past two (2) years.

iv. Foreign Exchange Adjustment

The 2012 monthly average is used as a proxy to estimate future charges.

v. Fuel & IPP Charge

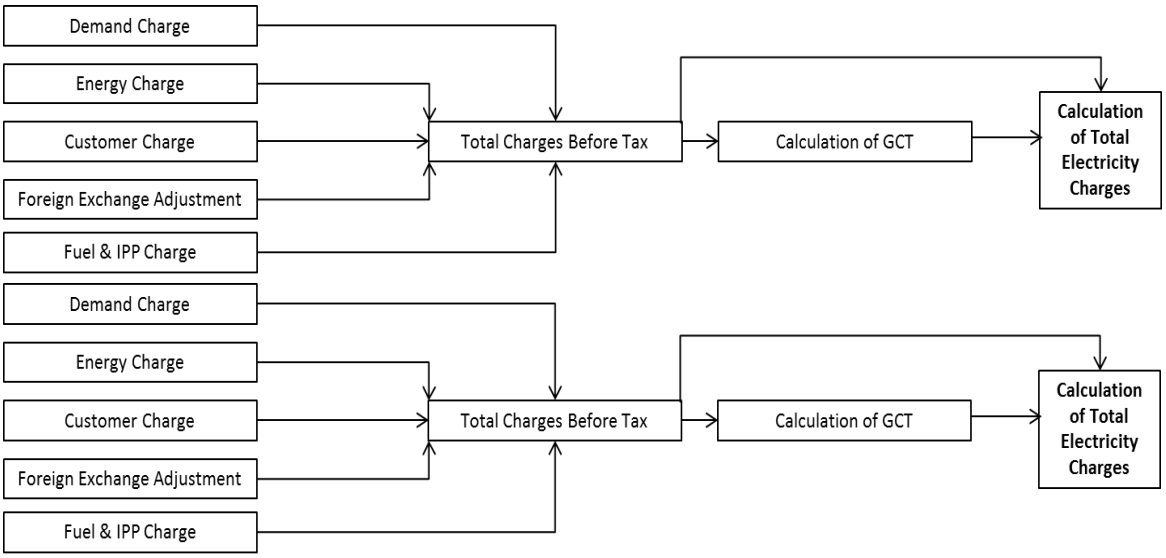
This is determined by multiplying the kWh usage and the Fuel &

IPP rate applicable for the month. Future charges are estimated using the average 2012 rate plus an assumed 10%.

vi. General Consumption Tax

The current rate of 16.5% is used to estimate future charges.

All of the items listed above are used, as shown below, to determine the total energy charge.



Actual electricity charges and usage submitted by NIC for Colbeck are used as base information in estimating future charges. The charges submitted are shown in Annex 1.

Based on the methods and assumptions indicated, monthly estimates for electricity charges are shown in Table 3 below.

Table 3: Monthly Estimate for Electricity Charges

Date	Demand Charge	Energy Charge	Customer Charge	F/E Adjustment	Fuel & IPP Charges	GCT	Total Electricity Charges
Apr-13	$157,270	$20,614	$5,160	$2,408	$141,435	$53,936	$380,824
May-13	$157,270	$20,614	$5,160	$2,408	$141,435	$53,936	$380,824
Jun-13	$157,270	$20,614	$5,160	$2,408	$141,435	$53,936	$380,824
Jul-13	$165,134	$21,022	$5,418	$2,408	$141,435	$55,344	$390,760
Aug-13	$165,134	$21,022	$5,418	$2,408	$141,435	$55,344	$390,760
Sep-13	$165,134	$21,022	$5,418	$2,408	$141,435	$55,344	$390,760
Oct-13	$165,134	$21,022	$5,418	$2,408	$141,435	$55,344	$390,760
Nov-13	$165,134	$21,022	$5,418	$2,408	$141,435	$55,344	$390,760
Dec-13	$165,134	$21,022	$5,418	$2,408	$141,435	$55,344	$390,760
Jan-14	$165,134	$25,649	$5,418	$2,408	$172,566	$61,244	$432,419

Date	Demand Charge	Energy Charge	Customer Charge	F/E Adjustment	Fuel & IPP Charges	GCT	Total Electricity Charges
Feb-14	$165,134	$25,649	$5,418	$2,408	$172,566	$61,244	$432,419
Mar-14	$165,134	$25,649	$5,418	$2,408	$172,566	$61,244	$432,419
Apr-14	$165,134	$25,649	$5,418	$2,408	$172,566	$61,244	$432,419
May-14	$165,134	$25,649	$5,418	$2,408	$172,566	$61,244	$432,419
Jun-14	$165,134	$25,649	$5,418	$2,408	$172,566	$61,244	$432,419

The total electricity charges over the tariff period applying the methodology set out above amounts to approximately **$6,018,252**. This gives a monthly average of **$401,217**.

4.4 Contribution to Capital Cost

The NIC, through the WUA, is allowed to recover contributions towards the recovery of infrastructure investments consistent with the Jamaica Water Sector Policy Strategies and Action Plan (2004). Section 6.3.2 of the Policy entitled "**Financing and Cost Recovery for Irrigation System"** states in part that:

> "*…In the case of new systems to be constructed under the National Irrigation Development Plan, users will also be required to pay a reasonable proportion of the capital costs. The proportion will depend on the ability of the users to pay, and will be decided on a case by case basis"*

The June 2009 agreed methodology for cost recovery outlines that a portion of capital cost should be borne by the Colbeck Water Users' Association Irrigation Specially Authorized Society. This portion should not exceed **twenty percent (20%)** of the net margin from the farmer's production. According to the June 2009 MOU the payment shall have a moratorium of 6 years commencing after the Colbeck Water Users' Association Irrigation Specially Authorized Society assumes full responsibility for the scheme.

The Office takes the view that capital contribution reflects a policy decision and as such will not make a decision on the reasonableness of the amount. The NIC's proposal of allowing capital cost to be recovered over a 20-year period at an interest rate of 6.1% is accepted. The contribution to capital cost calculated for the tariff period is approximately $6.97M.

4.5 Depreciation

The Office has employed the same methodology applied to the NIC's Hounslow scheme in determining the average useful life of a water system pipeline. This is

in keeping with the similarity of assets that are present at all schemes. Thus, it is assumed that the water systems at Colbeck and New Forest/Duff House will have a useful life of between 20–30 years. Based on the infrastructure cost for Colbeck of $46,420,758 and a useful life of 30 years, the annual depreciation expense is $1.55M a year.

4.6 Other Costs

The Office has allowed the other proposed provisions such as office expenses, motor vehicle expenses, office supplies, telephone, etc. The allowed costs are shown in Table 4 below.

4.7 Total Operating Cost

The Office has determined that the projected operating cost excluding depreciation and contribution to capital cost is $12.39M. The components of total operating cost are outlined in Table 4 below.

Table 4: Office determined operating cost

Operating Cost	Total
Total Administrative costs	1,763,806.20
Repair / Maintenance	1,133,062.50
Security Cost	439,230.00
Office Utilities	81,000.00
Telephone	40,500.00
Motor Vehicle Expenses	626,680.23
Office supplies	880,632.89
Insurance	1,416,328.20
Electricity - Pumps	6,018,252.00
Total operating cost	**12,399,492.00**

4.8 Overall Economic Rate

The revenue requirement for the Colbeck Scheme based on total economic cost is total operating cost plus depreciation and a contribution to capital cost. Table 5 details the Office's computation of economic rate.

Table 5: OUR's Computed Economic Rate

Details	*OUR Determined Costs*	*NIC Proposed economic cost*
Total Operating Cost	$12,399,429.00	$8,360,010.00
Depreciation	$1,547,358.00	$1,483,740.00
Total cost	$13,946,850.00	9,843,750.00
Return on investment	-	$6,083,460.00
Loan interest	$6,974,861.00	$3,564,900.00
Total Volume of Water Sold	135,541[3]	102900[4]
Total economic cost	$20,921,711.00	$19,492110.00
Economic cost per Meter cube	$154.36.00	$189.42.00

As shown in Table 5 above, the true economic rate of operating the system is $154.36/M^3$ if 100% variable rate is assumed.

4.8.1 NIC requested a two-part tariff structure consisting of a fixed and a variable element. When this rate structure is applied, the applicable economic rate to be charged by the NIC is shown in Table 6 below.

Table 6: Break-out of Economic Cost

Non-WUA Revenue requirement and applicable rate	**Details**
Total operating cost	$12,399,492.00
Depreciation	$1,547,358.00
Total cost	$13,946,850.00
Loan interest	$6,974,861.00
Total revenue requirement	$20,921,711.00
Revenue from service charge to cover administrative costs	$(1,763,806.20)
Monthly service charge per customer	$2,261.00
Net revenue requirement	$19,157,904.82
Total volume of water sold	135,541M^3
Rate per M^3	$141.34

The applicable service charge to be applied to Non-WUA member is $2,261 per hectare and the volumetric rate is $141.34/M^3$.

[3] Based on 90% efficiency
[4] Based on 70% efficiency

4.9 Subsidized Rate

Based on the requirements in the Memorandum of Understanding (June 2009) between NIC and the three water user groups, members of the WUA are required to make a repayment to capital cost six (6) years after the system is commissioned.

In calculating a subsidized rate for members of the WUA, total operating cost was used. Table 7 below outlines the calculation of a subsidized rate to be charged to members of the WUA, if a flat rate system is applied by the NIC. The volumetric subsidized rate is $91.48/M^3$.

Table 7: Calculation of subsidized rate to be charged to farmers

Details	Costs
Total Operating Cost	**$12,399,492.00**
Contribution to capital cost	$0
Total revenue requirement	**$12,399,492.00**
Total Volume of Water Sold	135,541.00
Rate per m^3	**$91.48**

4.9.1 The NIC suggested that a tiered tariff be charged to members of the WUA. The proposed structure consists of a fixed service charge and tiered volumetric charges.

4.9.2 The Office is of the opinion that a two-part tariff similar to that proposed for non-WUA members should be applied to WUA members, since sufficient data is not available to make an informed decision on a tiered structure. Table 8 outlines the two-tiered tariff structure developed for the NIC based on a subsidized cost.

Table 8: Break-out of subsidized cost

Service charge per WUA member	$490.50[5]
Net revenue requirement	$12,399,492.00
Total volume of water sold	135,541
Rate per M^3	$91.29

[5] Based on agreement between the NIC and members of the WUA.

4.10 Electricity Recovery Rate

During consultations, NIC outlined to farmers that in the interim they were seeking a rate to cover electricity charges only. Based on that undertaking, the Office has calculated the following electricity recovery rate.

Table 9: Electricity Recovery Rate

Cost Details	Total
Total electricity cost	$6,018,252.00
Less revenue from service charge	$(25,506.00)
Net Revenue requirement	$5,992,746.00
Total Volume of Water Sold	135,541 M^3
Variable Electricity recovery rate	$44.21/$M^3$
Service charge	$490.50

Service charge $490.50 and variable rate per cubic metre is 44.21M^3$.

Chapter Five: Quality of Service Standards

5.1. Quality of Service Standards

The NIC has established a Citizen's Charter which outlines its service delivery commitment to its customers. This notwithstanding, as part of its determination, the Office has determined *Quality* of Service Standards to further assist the NIC in delivering an acceptable level of service. These fall either in the category of: Guaranteed or Overall Standards and are discussed below.

5.2. Guaranteed Standards

Guaranteed Standards are minimum service level agreements to be honoured by the provider. They affect individual customers and a breach of any standard will result in a compensatory payment (i.e. a credit to the account). The mechanism for payment will either require the submission of a claim for some breaches, or will require the NIC to automatically credit the account associated with the breach. The compensatory payment will be equivalent to the applicable reconnection fee. Where applicable, a claim must be submitted within three (3) months of the occurrence of the breach. The Guaranteed Standards are set out in Table 10 below:

The following Table summarises the Standards:

Table 10: Guaranteed Standards

Area of Focus	Office Determined Standards	Mode of Compensation
Connection of New Customers	NIC is required to connect all new customers within five (7) working days after the contract for the connection is signed.	Claim
Meter Reading	Customers' meter must be read monthly.	Automatic
Meter Replacement	Maximum of two billing periods to replace faulty meters.	Claim
Reconnection	Customers are to be reconnected within a maximum of forty-eight (48) hours after payment of overdue amounts inclusive of reconnection fees.	Automatic

Area of Focus	Office Determined Standards	Mode of Compensation
Wrongful Disconnection	Where the NIC disconnects a supply that has no overdue amount or is the subject of an investigation internally or by the OUR.	Automatic
Reconnection after Wrongful Disconnection	NIC must reconnect a supply it inadvertently disconnected within twelve (12) hours of being notified of the error.	Automatic
Billing Adjustment	Adjustments to customer's account must be completed within one (1) billing period of identification of error, or subsequent to replacement of faulty meter.	Claim
Payment of Compensation	NIC must credit customer's account within one (1) billing period after a breach of any of the prescribed Guaranteed Standards. For the avoidance of any doubt, if the NIC does not compensate the customer within the specified time, this results in another breach.	Claim

5.3. Overall Standards

Unlike the Guaranteed Standards, Overall Standards are not customer specific and are established to guide the general delivery of service by the NIC. Although there is no compensation attached, the Office will take into consideration the Commission's performance against the Overall Standards whenever it requests a rate review. Table 11 summarizes the applicable Overall Standards.

Table 11: Overall Standards

Area of Focus	Office Determined Standard
Reliability of Supply – Notification	Minimum notification of twelve (12) hours for short interruptions (less than four (4) hours) and twenty-four (24) hours for longer periods
Reliability of Supply – Restoration after emergency lock off	Minimum of twenty-four (24) hours to restore supply

Chapter Six: Office Determinations

6.1 Rate Structure

The NIC proposed two diverse rate designs for its customer's classes. A two-part tariff structure for non-WUA members and a tiered system for members of the WUA.

Determination 1

The Office has determined that there will be a two-part billing structure for both WUA members and non-WUA members, known as the volumetric charge and the service charge. The volumetric and service charge to be applied by the NIC for the Colbeck scheme can either be the economic rate for running the project, the subsidized rate or an electricity recovery rate.

Determination 2

The Office has no objection to using the Colbeck rate as a benchmark for the New Forest/Duff House scheme.

6.2 Economic Rate

The economic rate is determined to be \$154.36/M^3, and is representative of the true economic cost of supplying water to the Colbeck scheme. If the NIC wishes to apply a two-part tariff structure then the rates to be applied are: A service charge of \$2,261 per customer and a volumetric charge of \$141.34/M^3.

Determination 3

The Office has determined that the economic rate per cubic metre is \$154.36/M^3.

6.3 Subsidized Rate

In the calculation of a subsidized rate, only total operating cost was used. The subsidized rate is determined to be \$91.48/m^3. If a two-part tariff is applied then total revenue projected to be collected from service charge is deducted from total revenue requirement to determine the net revenue requirement that the demand charge should cover. Total revenue to be generated from service charge is \$25,506, this result in a net revenue requirement of \$12.37M. Total water sale is projected as 135,541$m^{3.}$ The applicable rate becomes: A fixed service charge of \$490.50 and a volumetric rate of \$91.29/m^3.

Determination 4

The Office has determined that the subsidized rate is \$91.48/m^3

6.4 Electricity Recovery Rate

The NIC has indicated that at the minimum, rates must cover the cost of electricity. The Office has computed a recovery rate based on this minimum and has no objection to the NIC implementing such a rate.

Determination 5

The Office has determined that the electricity subsidized rates are a service charge of $490.50 and a volumetric charge of $44.21/m^3.

6.5 Indexation Mechanism

The NIC also proposed that the Office develop an indexation mechanism to allow for annual adjustment of the rates without applying for a tariff review. However, with the absence of actual data, the Office is unable to develop appropriate weights or an index to accurately reflect the movement in costs that will be associated with this project. It has therefore been decided that at this time, an indexation mechanism will not be developed. The NIC is required to submit annual audited data on the operation of this project. The Office will then review the rates to determine if they adequately reflect the costs of providing the service for both schemes. At that time, if necessary, the Office will develop an indexation mechanism.

Determination 6

The Office has determined that no Indexation Mechanism will be developed at this time. NIC is required to submit annual data to the Office prior to any review of rates.

6.6 Effective Date

The Office has determined that these rates will become effective June 10, 2013 and will be in effect for a period of at least fifteen (15) months.

Determination 7

These rates shall take effect on June 10, 2013 and shall remain in effect for a period of at least fifteen (15) months.

ANNEX 1

Date	Demand Charge	Energy Charge	Customer Charge	F/E Adjustment	Fuel & IPP Charges	GCT	Total Electricity Charges
Jan-11	$147,661.92	$1,813.56	$4,600.00	$(4,130.76)	$8,718.30	$15,866.30	$174,529.32
Feb-11	$148,698.14	$771.12	$4,600.00	$(4,354.77)	$3,797.06	$15,351.16	$168,862.71
Mar-11	$147,143.81	$3,327.24	$4,600.00	$(4,183.82)	$19,105.07	$16,999.23	$186,991.53
Apr-11	$150,252.48	$7,825.44	$4,600.00	$(4,514.31)	$43,581.34	$20,174.50	$221,919.45
May-11	$149,216.25	$13,237.56	$4,600.00	$(4,664.14)	$78,813.54	$24,120.32	$265,323.53
Jun-11	$146,625.70	$3,827.04	$4,600.00	$(4,263.95)	$24,186.46	$17,497.53	$192,472.78
Jul-11	$145,723.68	$7,448.00	$4,800.00	$(818.29)	$47,882.13	$20,503.55	$225,539.07
Aug-11	$148,262.42	$11,228.00	$4,800.00	$(506.01)	$66,463.34	$23,024.78	$253,272.53
Sep-11	$146,231.42	$10,052.00	$4,800.00	$(523.68)	$62,333.89	$22,289.36	$245,182.99
Oct-11	$147,754.67	$5,628.00	$4,800.00	$(278.40)	$35,427.46	$19,333.17	$212,664.90
Nov-11	$148,262.42	$10,654.00	$4,800.00	$(14.73)	$64,304.50	$22,800.62	$250,806.81
Dec-11	$148,262.42	$14,266.00	$4,800.00	$294.50	$89,908.41	$25,753.13	$283,284.46
Jan-12	$148,262.42	$17,514.00	$4,800.00	$151.81	$105,704.50	$27,643.27	$304,076.00
Feb-12	$147,754.67	$22,722.00	$4,800.00	$508.30	$148,868.05	$32,465.30	$357,118.32
Mar-12	$148,770.16	$16,814.00	$4,800.00	$834.88	$111,957.22	$28,317.63	$311,493.89
Apr-12	$146,231.42	$13,188.00	$4,800.00	$1,154.46	$86,452.99	$25,182.69	$277,009.56
May-12	$147,246.92	$20,244.00	$4,800.00	$1,280.12	$139,134.12	$31,270.52	$343,975.68
Jun-12	$148,770.16	$24,080.00	$4,800.00	$2,531.51	$150,121.60	$33,030.33	$363,333.60
Jul-12	$148,770.16	$22,330.00	$4,800.00	$3,394.87	$130,439.10	$51,106.13	$360,840.26
Aug-12	$156,208.85	$22,415.28	$5,160.00	$3,491.90	$106,048.34	$48,398.52	$341,722.89
Sep-12	$157,275.12	$25,516.32	$5,160.00	$3,783.46	$157,718.25	$57,659.77	$407,112.92
Oct-12	$154,076.30	$6,796.80	$5,160.00	$3,509.94	$45,719.04	$35,518.24	$250,780.32
Nov-12	$154,609.44	$27,838.56	$5,160.00	$5,851.49	$187,060.97	$62,785.88	$443,306.33