**Office of Utilities Regulation**

# Jamaica Public Service Company Limited Annual Tariff Adjustment 2008

# Determination Notice



June 1, 2008

## DOCUMENT TITLE AND APPROVAL PAGE

**DOCUMENT NUMBER:**  Ele 2008/05:Det/01

**DOCUMENT TITLE:  Jamaica Public Service Company Limited Annual Tariff Adjustment for 2008 - Determination Notice**

### 1.    PURPOSE OF DOCUMENT:

This document sets out the Office's Decisions on issues related to the annual price adjustment (2008) under the price control regime that became effective under the 2004 Tariff review.  See Decision Ele 2004/1

### APPROVAL

This document is approved by the Office of Utilities Regulation and the Decisions therein become effective as of **June 1, 2008**

On behalf of the Office:

J Paul Morgan
**Director General**

**May 20, 2008**

ii

*Jamaica Public Service Company Limited*
*Annual Tariff Adjustment 2008*
*Determination Notice*
*Document No. Ele 2008/5: Det/01*

**TABLE OF CONTENTS**

# Glossary

| | | |
|---|---|---|
| ABNF | - | Adjusted Non-fuel base rate |
| CAIDI | - | Customer Average Interruption Duration Index |
| CIS | - | Customer Information System |
| CPI | - | Consumer Price Index |
| CRP | - | Country Risk Premium |
| CT | - | Current Transformer |
| GDP | - | Gross Domestic Product |
| GOJ | - | Government of Jamaica |
| GIS | - | Geographic Information System |
| GPS | - | Global Position Satellite |
| IPP | - | Independent Power Purchase |
| JPS | - | Jamaica Public Service Company Limited |
| kVA | - | Kilo Volt Amperes |
| kWh | - | Kilowatt-hours |
| Licence | - | The All Island Electric Licence 2001 |
| MAIFI | - | Momentary Average Interruptions Frequency Index |
| MVA | - | Mega Volt Amperes |
| MW | - | Megawatt |
| MWh | - | Megawatt-hours |
| OCC | - | Opportunity Cost of Capital |
| O&M | - | Operating and Maintenance |
| OUR | - | Office of Utilities Regulation |
| PBRM | - | Performance Based Rate-Making Mechanism |
| SAIDI | - | System Average Interruption Duration Index |
| SAIFI | - | System Average Interruption Frequency Index |
| SCADA | - | Supervisory Control And Data Acquisition |
| SIF | - | Self Insurance Fund |
| T&D | - | Transmission & Distribution |
| TFP | - | Total Factor Productivity |
| TOU | - | Time of Use |
| WACC | - | Weighted Average Cost of Capital |

**Unless otherwise stated currency is Jamaican Dollars.**

# Introduction

This is the fourth annual tariff adjustment under the current price cap control mechanism which was implemented on June 1, 2004 in compliance with Schedule 3, Section 4 of the All-Island Electricity Licence 2001 and the Jamaica Public Service Company Limited - Tariff Review for period 2004 - 2009 - Determination Notice (OUR Document Ele 2004/2.1). In that Tariff Determination, the Office set the average non-fuel rate at J$5.627/kWh. It also directed that the price cap be applied on a global basis. Specifically, the annual adjustment resulting from changes in the inflation offset index, including efficiency gains and changes in quality of service are to be applied to the tariff basket instead of the individual tariffs. JPS is allowed to adjust the tariffs for each rate class on such a basis that the weighted average increase of the tariff basket does not exceed the price adjustment.

Under normal circumstances, the consideration of the annual adjustment would be a simple exercise as it would only be for the OUR to verify the adjustment factors to be applied by JPS – the decision already having been handed down in the 2004 Tariff. JPS, however, has included in the submission, as is its right, other considerations which require the Office's specific attention.

For the Q-factor calculation the Office has utilized the 2005 - 2007 performance data for SAIDI, SAIFI and CAIDI in the determination of the benchmark values for the 2008 tariff. Recognizing the difficulties that have been experienced in the measurement of the indices, the Office is reiterating that MAIFI be computed annually over the period 2006 – 2009 and the index used as the baseline for incorporating MAIFI in the computation of the value of "Q" in the 2009 rate review.

In August 2007, JPS experienced damage to its electricity infrastructure from the passage of Hurricane Dean. JPS has estimated the cost of the damage to be approximately J$1.2 Billion and has filed a claim under the "Z-factor" provisions in the price formula to recover these costs. The Office is of the view that restoration costs associated with the hurricane represent a claim against the Electricity Disaster Fund and not a liability to be recovered through the "Z-factor" clause.

The Office took into consideration the findings of its 2006 Annual Adjustment Rate Determination (Ele 2006/02) section 4.1 "Providing for an adequate Sinking Fund"). Consequently, the Office has determined that the annual sinking fund be increased from US$3 million to US$5 million per annum. The Office is mindful of the challenges imposed on consumers in the context of the wider issues affecting the economy but lack of action on this issue has the potential of causing even greater challenges to consumers should significant damage occur to the company's Transmission and Distribution System as a result of acts of God such as hurricanes.

# 1. Summary of the Office's Decision

The Licence stipulates that the annual PBRM filing follows for the **annual rate of change in non-fuel base electricity prices (dPCI)** be determined through the following formula:

$$dPCI = dI \pm X \pm Q \pm Z$$

Where,

dPCI  =  annual rate of change in non-fuel base electricity prices;

dI  =  the annual growth rate in an inflation and devaluation measure;

X  =  the offset to inflation (annual real price increase or decrease) resulting from productivity changes in the electricity industry;

Q  =  allowed price adjustment to reflect changes in the quality of service provided to the customers; and

Z  =  he allowed rate of price adjustment for special reasons not captured by the other elements of the formula.

The Price Index (PCI) is therefore to be adjusted as follows:

$$PCI_t = PCI_{t-1}(1 + dPCI)$$

The price cap is to be applied on a global basis. Specifically, the annual adjustment factor $(1 + dPCI)$ is to be applied to the tariff basket instead of the individual tariffs for each rate class. While each rate class attracts a specific weighting the weighted average increase of the tariff basket must not exceed the global price adjustment factor $(1 + dPCI)$.

At any time the actual price index (API) must be less than PCI

$$dI = [0.76 * e + 0.76 * 0.922 * e * i_{US} + 0.76 * 0.922 * i_{US} + 0.24 * i_j]$$

Where:

$e$  =  Percentage change in the Base Exchange Rate

$i_{US}$  =  US inflation rate (as defined in the Licence)

$i_j$  =  Jamaican inflation rate (as defined in the Licence)

0.76  =  US factor

0.24  =  Local (Jamaica) factor

## 1.1    Annual Inflation and Devaluation Growth Rate (dI)

The following data was used to derive the annual inflation and devaluation growth rate:

- The Jamaican twelve-month point-to-point inflation rate to February 29, 2008 of **19.92%**, derived from the most recent CPI data[1] ($i_j$);

- The U.S. twelve-month point-to-point inflation rate to February 29, 2008 of **4.03%,** derived from the US Department of Labour statistical data[2] ($i_{US}$); and

- The change in the base exchange rate from **J\$68:US\$1 to J\$71.5:US\$1**

- **The Annual Inflation and Devaluation Growth Rate (dI) is determined to be 11.66%.**

- **This is to be offset by the 3.91% for the cumulative monthly adjustment due to foreign exchange movements during the year.**

## 1.2    Annual X - Factor Offset to Inflation (X)

**X = 2.72% as previously determined in 2004 (Ele2004/2.1) is applicable for the 2008 annual tariff adjustment**

## 1.3    Allowed Q-Factor Price Escalation reflecting Changes in Service Quality (Q)

The Q-factor adjusts the annual escalation rate to reflect changes in quality of service provided to customers by JPS.

**Based on its review and the analysis of the prevailing issues the Office has determined that for the 2008 adjustment, Q = 0**

## 1.4    Allowed    (Z-Factor)    Price    Escalation    reflecting    Special Circumstances (Z)

As defined in Schedule 3, (Exhibit 1) of the Al-Island Electricity licence (2001):

The Z-factor is the allowed percentage increase in the price cap index due to events that:

- affect the Licensee's costs;
- are not due to the Licensee's  managerial decisions; and
- are not captured by the other elements in the price cap mechanism.

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[1]    Obtained from the Statistical Institute of Jamaica, CPI Statistical Bulletin February 2008)
[2]    Obtained from US Bureau of Labour Statistics website, http://data.bls.gov/cgi-bin/surveymost

In its filing, JPS is not actually requesting an increase in tariffs as a direct result of the 2007 hurricane season and its impact on the company. In any case the Office has determined that restoration costs associated with the hurricane represent a claim against the Electricity Disaster Fund and not a liability to be recovered through the Z-Factor.

Therefore for the purpose of this Determination, $Z = 0$

## 1.5    Hurricane Sinking Fund

The Office has determined that the annual sinking fund be increased from US$3 million to US$5 million per annum based on its 2006 Annual Adjustment Rate   Determination (Ele 2006/2) section 4.1  "Providing for an adequate Sinking Fund". The Office is mindful of the challenges imposed on consumers in the context of the wider issues affecting the economy but lack of action on this issue has the potential of causing even greater challenges to consumers should significant damage occur to the company's Transmission and Distribution system as a result of such acts of God as hurricanes. The increase in the fund from US$3 million to US$5 million per annum translates to an increase in the non-fuel rate of J$0.0441/kWh or 0.65% and will be applied to the energy charge only (i.e. no impact on customer and demand charges).

## 1.6    Total non-fuel Adjustment

The annual Adjustment of the base non-fuel tariffs approved by the Office effective **June 1, 2008** is as follows:

Table 1.1 below provides details of the current year annual inflation adjustment.

**Table 1.1: Details of total non-fuel Adjustment (2008)**

| | |
|---|---|
| dI | 11.66% |
| X | (2.72%) |
| Q | 0.00% |
| Z | 0.00% |
| | |
| Subtotal dPCI | 8.94% |
| Hurricane Sinking Fund Adjustment | 0.65% |
| Total change in Non-Fuel Base Rates | 9.59% |
| Hurricane Ivan Recovery Charge | 0.06% |
| Less Foreign Exchange Base Rate movement | 3.91% |
| | |
| Effective change in Non-Fuel Rates | 5.74% |

**In Addition the Hurricane Ivan recovery charge of J$0.074/kWh is adjusted by 3.91% to J$0.078/kWh, reflecting the foreign exchange base rate movement.**

*It is estimated that the increase in non-fuel charges will reflect in a total bill impact of 1.93% for the typical residential customer and 1.55% for the typical large commercial customer.*

As provided for in the Licence, this increase is applied to the basket of tariffs and JPS may adjust rate schedule individually, so long as the average does not exceed the average total adjustment.

Table 1.2 summarizes the inflation adjusted base non-fuel tariffs to be applied in the current year.

**Table 1.2: Inflation Adjusted Base Non-Fuel Tariffs (Di ± X ± Q+Z)**

| Class | Block/ Rate Option | Customer Charge (J$/Month) | Energy Charge (J$/kWh) | Hurricane Recovery Charge (J$/kWh) | Demand (KVA) Revenue (J$/Kva) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Std. | Off-Peak | Part Peak | On-Peak |
| Rate 10 LV | <100 kWh | 90 | 5.747 | 0.078 | | | | |
| Rate 10 LV | >100 kWh | 90 | 10.068 | 0.078 | | | | |
| Rate 20 LV | | 207 | 8.934 | 0.078 | | | | |
| Rate 40A LV | | 2871 | 6.042 | 0.078 | 357 | | | |
| Rate 40 LV | STD | 2871 | 2.411 | 0.078 | 914 | | | |
| Rate 40 LV | TOU | 2871 | 2.411 | 0.078 | | 37 | 399 | 510 |
| Rate 50 MV | STD | 2871 | 2.178 | 0.078 | 822 | | | |
| Rate 50 MV | TOU | 2871 | 2.178 | 0.078 | | 34 | 358 | 459 |
| Rate 60 LV | STREET-LIGHTS | 752 | 10.597 | 0.078 | | | | |
| Rate 60 LV | TRAFFIC – LIGHTS | 752 | 7.155 | 0.078 | | | | |

The Hurricane recovery charge which represents Hurricane Ivan recovery charge shall be $0.078 per kilowatt-hour for all kilowatt-hours. This charge will remain in force for another 12 months (after June 1, 2008); the period remaining from the designated 24 months slated for recovery of Hurricane Ivan related costs. The per kilowatt hour charge is to be clearly identifiable on all customer bills and will be removed once the full recovery has been attained.

# 2. Summary of JPS' Proposal for Rate Adjustment

In compliance with the All-Island Electric Licence 2001 ("the Licence"), JPS filed an application, dated 31st March 2008, for the annual rate adjustment with the Office. The Company, in its submission, sought approval for the following:

- A weighted average annual adjustment factor (dI) of 11.66% on the June 2008 non-fuel base rates in keeping with the annual adjustment clause contained in the rate schedule. This inflation adjustment does not take into account the movement in the foreign exchange component of the index during the year. This year also represents the fourth year in which the 2.72% productivity factor will be applied in accordance with the Office's June 25, 2004 Determination (Ele 2004/2.1). The weighted average increase in inflation will be offset by the 2.72% productivity factor, resulting in an increase of 8.94% in the non-fuel base tariffs of June 2007.

- The Q-factor to be set at zero in this 2008 annual tariff submission. JPS has proposed that the OUR utilizes JPS' 2005 performance data on SAIDI, SAIFI and CAIDI as the benchmark quality indices in the determination of the Q-factor. JPS has compiled and submitted the performance data for the calendar year 2006 and proposed that the submitted data be used as the basis of determining the Q-Factor along with the previously established benchmark for 2005.

- An adjustment through the Z-Factor to recover the costs incurred by the passage of Hurricane Dean, specifically the recovery of J$1,234M:

    i. additional expenditure of J$688.54M (i.e. costs directly associated with Hurricane Dean); and

    ii. the non-fuel revenue requirement of J$410.46M, which was under-recovered as a result of Hurricane Dean;

    iii. the total Opportunity Cost of Capital of J$135.0M, based on an assumed two-year recovery period of the J$744M in equal monthly installments, a six-month moratorium, the cost of debt of 11% and assuming interest on the reducing balance basis.

- An increase in the annual funding rate for the Self-Insurance Fund from US$3M per annum to US$5M per annum as per section 4.1 of the Office's 2006 Determination Notice (Ele 2006/1). This additional saving would translate into an additional energy charge of 4.41 ¢ per kWh using forecast energy sales of 3,245,000 MWh.

## 2.1 JPS' Proposals on the Q-Factor

In its filing for the Q-factor to be set at zero in this 2008 annual tariff submission JPS has proposed that the OUR utilizes JPS' 2005 performance data on SAIDI, SAIFI and CAIDI as the benchmark quality indices in the determination of the Q-factor. JPS has compiled and submitted the performance data for the calendar year 2006 and proposed that the submitted data be used as the basis of determining the Q-Factor along with the previously established benchmark for 2005.

JPS' performance for 2007 in the three main quality-of-service measures: SAIDI, SAIFI and CAIDI are shown in the Table 2.1 below. The data shown represents the complete system performance and includes interruptions due to generation, transmission and distribution outages. Additionally, the distribution interruptions include both feeder level and sub-feeder level outages. As indicated by JPS, all the computations to derive the indices are based on the 2006 customer base of 572,086. As shown in the table, the computations show a peak in all three indices in July, which is the month when JPS experienced a total system shutdown.

### Table 2.1: JPS 2007 Performance on SAIDI, SAIFI and CAIDI
### *JPS Outage Data*

| *Month* | *SAIDI* | *SAIFI* | *CAIDI* |
|---------|--------|--------|--------|
| *January* | 152.21 | 1.63 | 93.38 |
| *February* | 146.18 | 1.75 | 83.53 |
| *March* | 191.92 | 1.94 | 98.93 |
| *April* | 93.01 | 0.90 | 103.34 |
| *May* | 224.36 | 1.65 | 135.98 |
| *June* | 367.64 | 3.37 | 109.09 |
| *July* | 620.58 | 3.43 | 180.93 |
| *August* | 192.46 | 1.64 | 117.35 |
| *September* | 355.5 | 2.22 | 160.14 |
| *October* | 259.01 | 2.22 | 116.67 |
| *November* | 227.36 | 1.56 | 145.74 |
| *December* | 177.36 | 1.59 | 111.55 |
| *Grand Total* | **3008** | **23.90** | **125.84** |

JPS has indicated that the 2007 target is based on the data supplied in the 2007 Annual tariff adjustment submission, which was **3,359** for SAIDI; **35.92** for SAIFI; and **91.65** for CAIDI.

JPS' performance in 2007 would be classified into the dead band performance range when compared to the 2007 benchmark target, as noted in Table 2.2 below:

**Table 2.2: Actual 2007 Q-factor Performance vs. the 2007 Target**

| | | | |
|---|---|---|---|
| SAIDI | improved by 10% | equaling | 0 Quality Points |
| SAIFI | improved by 33% | equaling | 3 Quality Points |
| CAIDI | worsened by 37% | equaling | -3 Quality Points |

JPS proposed that since the sum of the quality points on SAIDI, SAIFI and CAIDI is 0, then 'Q' = 0 would apply for the 2008 annual tariff adjustment submission.

JPS proposed that the performance targets for 2008 shall be based on the 2006 benchmark adjusted for 5% improvement for each of the indices (SAIDI, SAIFI and CAIDI) as noted in Table 2.3. The actual performance targets for 2008 are shown in Table 2.4 below:

**Table 2.3: The OUR Targets for the Q-Factor 2006 – 2009**

| Year | Target SAIDI | Target SAIFI | Target CAIDI |
|---|---|---|---|
| 2006 | SAIDI_2005 | SAIFI_2005 | CAIDI_2004/5 |
| 2007 | SAIDI_2005 * (1 – 0.02) | SAIFI_2005* (1 – 0.02) | CAIDI_2005* (1 – 0.02) |
| 2008 | SAIDI_2005* (1 – 0.05) | SAIFI_2005* (1 – 0.05) | CAIDI_2005* (1 – 0.05) |
| 2009 | SAIDI_2005* (1 – 0.08) | SAIFI_2005* (1 – 0.08) | CAIDI_2005* (1 – 0.08) |

**Table 2.4: Setting the 2008 Q-factor Performance Benchmark**

| | 2006 Target | Adjustment factor | 2008 Target |
|---|---|---|---|
| SAIDI | 3,428 | * (1- 0.05) | = 3257 |
| SAIFI | 36.65 | * (1- 0.05) | = 34.82 |
| CAIDI | 93.52 | * (1- 0.05) | = 88.84 |

Additionally, JPS has proposed that the 2007 customer-count, reflecting a customer base of 581,056, be used as the basis for the calculation of the 2008 indices.

### 2.2.1    JPS' Proposal on Force Majeure

JPS proposed that the network be divided into electrical/operational areas as opposed to geographical areas. Each network element can be associated with a specific number of customers downstream based on the cause and effect principle. JPS would seek exclusion from the calculation of reliability indices in relation to the customer set associated with the electrical/operational failure only. JPS would apply for exclusion based on the primary network element and the associated affected customers and indicate the beginning and ending time of the event.

## 2.3    Z-factor Component

On August 19, 2007 Hurricane Dean, a category 4 storm, passed in close proximity to Jamaica and affected the Island  with hurricane force winds.

Against this background, JPS included in its submission for its Annual Rate Adjustment in March April 2008 a Z-factor claim which relates to hurricanes storm damage suffered by JPS' in 2007. JPS has stated that the claim has been quantified on the total cash flow impact of the hurricane storm damage on the company. The Z-factor claim is outlined in details in sections 2.6.1 to 2.6.5 below.

JPS holds the position that the cost included in this claim are the result of risks that are outside of its managerial control, and on that basis, recovery of costs associated with such risks should not be denied.

### 2.3.1    Restoration Costs

A summary of Hurricane Dean restoration costs as posited by JPS is provided in Table 2.5 below.

**Table 2.5: Hurricane Dean Restoration Costs**

|  | J$'000 |
|---|---|
| GENERATION | 45,434 |
| TRANSMISSION | 49,081 |
| DISTRIBUTION | 522,176 |
| OTHERS | 71,846 |
| **TOTAL** | **688,538** |

JPS has noted that these costs relates to incremental costs incurred directly as a result of the hurricane restoration costs and no embedded costs (e.g. Basic salaries of employees working on the restoration project) have been included.

### 2.3.2    Fixed Cost Recovery

JPS has requested a Z-factor adjustment to recover prudently incurred costs which, due to events that meet the criteria stated in the Z-factor, cannot otherwise be recovered under the PBRM regulatory framework. The recovery of fixed costs is of extreme importance, as JPS has significant operating costs which do not reduce with sales, notably, payroll, insurance and debt servicing costs and the recovery of these costs represents the company's basic ability to pay for approved operating costs under the PBRM framework. In this regard, JPS' approach to the Z-factor claim is to:

▪ Claim for appropriately incurred incremental costs (i.e. costs directly associated with the hurricane restoration effort) and not attempt to include any fully embedded costs to the incremental cost claim (e.g. regular salaries for employees); and

- Claim from appropriate embedded costs in the non-fuel revenue requirement which were under-recovered in the energy sales (i.e. sales lost as a result of the hurricane)

JPS has presented the argument, that while it is fully cognizant of the normal sales risk it faces and its ability to recover operating costs, it should not be penalized for the energy sales that are not realized as a direct result of a hurricane. The foregone energy sales in this context have the direct result of causing under–recovery of normal operating costs that would otherwise be recovered in the PBRM formula. In relation to the above, JPS is emphasizing the point, that since the Z-factor is designed to address special reasons not captured under other elements of the PBRM mechanism, it should be appropriate apply the Z-factor to recover such costs.

As it relates to the energy sales performance, the sales forecast for the twelve month period June 1, 2007 to May 31, 2008 was 3,245,000 MWh (and this was expected to grow by 4% for 2008/9.  A review of the actual billed sales for the three months period shows that sales were in line with the forecasted figure as shown in Table 2.6 below.

**Table 2.6: Comparison of Pre-hurricane Sales vs Forecast**

|  | May-07 | Jun-07 | Jul-07 | TOTAL |
|---|---|---|---|---|
| Actual Sales (MWh) | 266,691 | 280,620 | 274,815 | 822,126 |
| Forecast Sales (MWh) |  |  |  | 822,067 |
| Actual sales excess over forecast (%) |  |  |  | 0.01% |

With regard to the sales data shown in Table 2.6, JPS has noted that any sales shortfall experienced during the immediate months following the hurricane (i.e. August to October 2007) relative to the applicable sales forecast is deemed to be the result of Hurricane Dean. (Refer to Table 2.7 for more details)

The embedded non-fuel costs based on the Office's approved revenue requirement, adjusted to exclude costs that are not considered appropriate for those purposes. The items excluded relate to the revenue requirement for IPP costs, sinking fund costs and the revenue components associated with the demand charge and customer charge. These items have been excluded for the following reasons:

- there can be no under-recovery of IPP costs due to the IPP surcharge methodology;

- there is not likely to be any notable under-recovery on the demand charge because of lower than planned energy sales due to the nature of the demand charge;

- there is not likely to be any notable under-recovery in customer charges ; and

- there is no necessity to recoup the sinking fund component of the revenue requirement lost to lower than planned energy sales.

Based on the actual energy sales for the three month period August to October 2007, compared to the expected sales for a comparable period derived from the 2007/8 annual sales forecast of 3,245,000 MWh adjusted for 4% sales growth, the value of the operating costs embedded in the non-fuel revenue requirement which were under-recovered as a result of hurricane Dean is J$410.46M, as reflected in Table 3.7 below.

**Table 2.7: Non-Fuel Revenue lost to Hurricane Dean**

| | J$000's | | Billing determinants - proportions (2007) | |
|---|---|---|---|---|
| Approved revenue requirement | | | Energy charge | 82.50% |
| Less: | | | Customer charge | 0.30% |
| - IPP | | | Z-factor charge | 0.90% |
| - Sinking Fund | | | Demand charge | 16.30% |
| Adjusted revenue requirement | | | | 100.00 |

| | J$000's |
|---|---|
| Adjusted revenue requirement | |
| for energy charge only (82.50%) | $11,693,317 |
| Forecast sales (MWh) in 2004 | 3,075,800 |
| Average per kWh energy rate (2004) | $3.80 |
| Cumulative rate adjustments | |
| from 2005 to 2007 | 18.02% |
| Adjusted Avg. per kWh energy rate | $4.49 |
| Billed sales Aug-Oct'07 (MWh) | 752,215 |
| Expected sales Aug-Oct'07 (MWh) | |
| | |
| based on 4% growth on 3,245,000 | 843,700 |
| Deemed sales short-fall due | |
| | |
| to hurricane Dean (10.8%) | 91,485 |
| **Estimated Short-fall** | **$410,459** |

### 2.3.3 Opportunity Cost of Capital (OCC)

JPS has represented that the Z-factor impact on the company is in two-folds in terms of its negative effect on working capital. As per Table 2.5 above, JPS claimed that it incurred additional expenditure of approximately J$688.54M while at the same time experienced an under-recovery of fixed cost amounting to J$410.46M, making the total cash impact on the company J$1,099M.

JPS has pointed out that it funded the hurricane restoration effort primarily through debt financing, which includes a US$5M or (J$355M) advance from the Sinking Fund. Accordingly, JPS has proposed that the opportunity cost of capital be calculated using the Company's average cost of debt provided that the J$355M portion advanced from the Sinking Fund is treated as interest-free. Accordingly, JPS has also proposed that the OCC be only calculated on J$744M (i.e. J$1,099M – J$355M).

12

Based on an assumed two-year recovery period of J$744M in equal monthly installments, a six-month moratorium, the cost of debt of 11% and assuming interest on the reducing balance basis, the total OCC on J$744M would be J$135.0M.

Based on all of the above, the total cash impact of Hurricane Dean on the Company in relation to restoration costs, under-recovered fixed costs and the opportunity cost of capital was J$1,234.0M, of which J$355M has been received as an advance from the sinking fund, leaving a balance of J$879M to be recovered.

### 2.3.4    Leveraging the Self Insurance Fund

JPS has reported that the Sinking Fund, or Self-Insurance Fund (SIF), currently has a balance of approximately US$4M as at March 31, 2008 (March 31, 2007: US$6M), which is partly due to the US$5M advance granted for the SIF by the OUR (without prejudice) in relation to the damages incurred as a result of Hurricane Dean. According to JPS, the advance was considered to be in the best interest of all stakeholders, since the interest being earned by the SIF investments was less than 5% p.a. compared to the Company's average cost of borrowing of 11%.

The current annual funding rate for SIF is US$3M per annum, since June 2006, up from US$2M per annum previously.  As was previously documented in the section 4.1 "Providing for an adequate Sinking Fund" of the 2006 Determination Notice, consideration was given to increasing the funding rate to US$5M per annum. This increased level of funding was based on the increased hurricane activity in the region and the desire to achieve a target savings of US$20M in the SIF.

At the same time, JPS has highlighted the need to maximize the effectiveness as a means of offsetting damages as a result of Acts of God, thereby mitigating the need to utilize the Z-factor adjustment under the PBRM. In this regard, JPS has entered into negotiations with several financial institutions (locally and internationally), with the OUR's knowledge, to discuss leveraging (or collateralizing) the annual savings of the SIF so as to obtain increased protection for the SIF during the infancy stage. According to JPS, the discussions so far have been encouraging and have revealed that with a US$5M annual funding rate that the Company would be able to obtain US$30M in immediate SIF protection.

In respect of the above, JPS has indicated that it will provide the OUR in short order with full details of the collateralizing arrangements, along with the pertinent financial information as a means of informing the OUR of the variability of this planned approach.  JPS has also signaled that early indications suggest that this strategy will provide access to cheaper sources of financing than that which is currently available, taken as a whole and will be on an unsecured basis for tenures which are consistent with their expectations. The end result, they believe is an arrangement that will help to mitigate the potential for rate shock and the need to implement Z-factor adjustment under the annual PBRM.

JPS believes that the hurricane experience in 2007 reinforces the need to increase the funding rate to US$5M per annum and accordingly requests that the OUR grants the approval to do so.

This additional savings of US$2M (J$143M at the Base Exchange rate of $71.50) would translate into an additional energy charge of 4.41¢ per kWh using forecast energy sales of 3,245,000 MWh. This additional charge is reflected in Table 6.1 of section 6 below.

### 2.3.5    JPS Proposed Recovery Mode

### 2.3.5.1 Interim Recovery of the 2007 Z-factor Claim

Having regard to the pending Tribunal hearing over the 2004 Z-factor claim, in the event that it is determined by the OUR that any of the claims, as set out in section 2.2 of JPS March 31, 2008 Annual Tariff Adjustment Submission, are not recoverable in full or in part, JPS asks the OUR to make a determination that JPS be allowed to effect recovery of any item determined recoverable, whether in full or in part, in a manner to be determined by the OUR (i.e. whether through the Self Insurance Fund or through additional energy rates).

Additionally, JPS requests a determination that the recovery of any sum, in accordance with the request in the paragraph above, be affected without prejudice to the company's right of appeal against any determination(s) that any item of the claim or any portion thereof, as set out in section 3.6 above is not recoverable by JPS.

This request is made to prevent undue accumulation of any Z-factor claim amounts. Any delay in recovery will necessarily result in a higher level of recovery for past events while leaving exposure for future events including the upcoming 2008 hurricane season. This is clearly an undesirable situation that increases the risk of exposure of the company.

In accordance with the foregoing, JPS has provided a pro forma adjustment in Table 2.8 below to its current Z-factor claim of J$1,234.0M. According to JPS, these pro forma adjustments were made based on the guidance provided by the OUR in its 2004 ruling and subsequent letter (dated September 9, 2005) provided to JPS.  In relation to the Z-factor, the OUR was of the opinion that:

- the recovery of revenue losses was inappropriate;

- the inclusion of claims in relation to generation assets was inappropriate;

- there were enhancement costs to the system which should be treated as capital improvements and deferred for recovery until the 2009 rate review; and

- the principle of the opportunity cost of capital was correct.

Applying the OUR principles above, the JPS claim could be adjusted as follows:

**Table 2.8: Pro forma Adjustment to JPS' Z-factor claim based on OUR principles**

| {Amount in J$ millions} | J$M |
| --- | --- |
| Total claim per JPS | 1,234.00 |
| Adjustment to exclude: | |
|    - Loss revenues | (410.50) |
|    - Damage to Generation Assets | (45.40) |
|    - OCC per JPS | (135.00) |
| Sub-total of Allowed costs (see Table 3.9) | 643.10 |
| Further adjustments to exclude | |
|    - Enhancement costs (see Table 3.9) | (217.65) |
| Add: OCC per OUR principles | 12.77 |
| **Undisputed portion of claim** | **438.22** |

**Table 2.9: Pro forma determination of enhancement cost based on PUR principles**

| | Allowed Cost (J$'000) | Depreciation Factor (%) | Enhancement Cost (J$'000) | Restoration Cost (J$'000) |
| --- | --- | --- | --- | --- |
| Payroll & Wage costs | 90,643 | 0 | 0 | 90,643 |
| Labour Expense | 29,702 | 0 | 0 | 29,702 |
| Third Party Contractors | 161,819 | 33 | 53400 | 215,252 |
| Material & Equipment | 328,505 | 50 | 164253 | 492,808 |
| Office Expenses | 15,078 | 0 | 0 | 15,078 |
| Building & Misc. Expenses | 16,405 | 0 | 0 | 16,405 |
| Transportation Expenses | 951 | 0 | 0 | 951 |
| **Total** | **643,103** | | **217653** | **425,450** |

## 2.3.5.2 Recovery through the Sinking Fund or through additional energy charges

JPS has asked the OUR to determine what it considers to be the appropriate method for recovering the 2007 hurricane costs, whether such costs should be recovered:

i.   through the SIF on a leveraged basis, in which case the annual funding rate would need to be increased to US$5M per annum, which in turn would require an additional charge of 4.41 ¢ per kWh; or

ii.  directly under the Z-factor clause as an additional per kWh charge, resulting in an additional charge of 6.62 ¢ per kWh, as per the calculation provided below:

$$Z = \frac{J\$438.22M}{6,619,800kWh}$$

$$= 6.62 \text{ ¢ per kWh}$$

Where:

Z = the embedded Z-factor rate denoted in Jamaican cents
J$438.22M = the total hurricane impact on a pro forma basis
6,619,800 kWh = sales forecast (kWh) for twenty-four month period Jun' 07 – May'09.

JPS has indicated that both methods have unique pros and cons; however they tend to favour the Sinking Fund approach as the SIF provides the opportunity for faster recovery of costs since such recovery would not depend on each annual tariff reset.

# 3. Office's Analysis of the PBRM

Effective June 1, 2005 and annually thereafter, JPS has been permitted to make an adjustment to the non-fuel base rate (See Decision Ele 2004/2.1) on the basis of the formulae below:

$$ABNF_y = ABNF_{y-1} (1 + dPCI)$$

Where,

$ABNF_y$ = Adjusted Non-Fuel Base Rate for Year "y"

$ABNF_{y-1}$ = Non-Fuel Base Rate prior to adjustment

dPCI = Annual rate of change in the non-fuel electricity prices as defined below

PCI = Non-fuel Electricity Pricing Index

Additionally, the annual PBRM filing for the annual rate of change in non-fuel electricity prices (dPCI) is determined through the following formula:

$$dPCI = dI \pm X \pm Q \pm Z$$

Where,

dPCI = annual rate of change in non-fuel electricity prices;

dI = the annual growth rate in an inflation and devaluation measure;

X = the offset to inflation (annual real price increase or decrease) resulting from productivity changes in the electricity industry;

Q = allowed price adjustment to reflect changes in the quality of service provided to the customers; and

Z = the allowed rate of price adjustment for special reasons not captured by the other elements of the formula.

The price cap is to be applied on a global basis. Specifically, the annual adjustment factor (1 + dPCI) is to be applied to the tariff basket instead of the individual tariffs for each rate class. While each rate class attracts a specific weighting the weighted average increase of the tariff basket must not exceed the global price adjustment factor (1 + dPCI).

## 3.1 Annual growth rate in inflation and devaluation

The annual growth rate in inflation and devaluation factor dI is calculated by the formula -

**dI = [0.76 \* e + 0.76 \* 0.922 \* e\*i$_{US}$ + 0.76 \* 0.922 \* i$_{US}$ + 0.24 \* ij]**

Where,

| | |
|---|---|
| e | = Percentage change in the Base Exchange Rate |
| i$_{US}$ | = US inflation rate (as defined in the Licence) |
| i$_j$ | = Jamaican inflation rate (as defined in the Licence) |
| 0.76 | = US factor |
| 0.24 | = Local (Jamaica) factor |

The application of the above formula results in the applicable annual adjustment factor of **11.66%,** derived using the following factors:

- The Jamaican twelve-month point-to-point inflation rate to February 28, 2008 of **19.92%,** derived from the most recent CPI data[3];

- The U.S. twelve-month point-to-point inflation rate to February 28, 2008 of **4.03%,** derived from the US Department of Labour statistical data[4]; and

- The change in the base exchange rate from **J$68:US$1 to J$75:US$1**

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[3]     Obtained from the Statistical Institute of Jamaica, CPI Statistical Bulletin February 2008)

[4]     Obtained from US Bureau of Labour Statistics website, http://data.bls.gov/cgi-bin/surveymost

**Calculation of Annual inflation adjustment (dI):**

The annual inflation adjustment (dI) calculation form which the escalation factor is derived is shown in Table 3.1 below:

**Table 3.1: Escalation Factor**

| Line | Description | Formula | Value |
|------|-------------|---------|-------|
| | Base Exchange Rate | | |
| L1 | Current | | 68 |
| L2 | Proposed | | 71.5 |
| | Jamaica Inflation Index | | |
| L3 | CPI @ Feb 2008 | | 121.50 |
| L4 | CPI @ Feb 2007 | | 101.32 |
| | US Inflation Index[3] | | |
| L5 | CPI @ Feb 2008 | | 211.70 |
| L6 | CPI @ Feb 2007 | | 203.50 |
| L7 | Exchange Rate Factor | (L2-L1)/L1 | 5.15% |
| L8 | Jamaican Inflation Factor | (L3-L4)/L4 | 19.92% |
| L9 | US Inflation Factor | (L5-L6)/L6 | 4.03% |
| L10 | Escalation Factor (dI) | 0.76*L7*(1+0.922*L9)+0.76*0.922*L9+0.24*L8 | 11.66% |

## 3.2    X – Factor Component of PBRM

The applicable X-Factor was determined by the Office (Decision Ele 2004/2.1) to be 2.72%

The effect on the 2008 annual tariff adjustment is outlined in Tables 5.3, 5.5 and 6.1 below.

## 3.3    Q-Factor Component of PBRM

The Q-factor is the allowed price adjustment to account for changes in the quality of service provided to customers. The criteria and components of the Q – Factor are set out in the Office's Decision Ele 2004/2.1.

In the 2006 tariff adjustment, the Office decided that the verified set of SAIFI, SAIDI and CAIDI indices for 2005 will be used as the benchmark quality level until the next tariff review in 2009.  It further stated that it expected improvements in SAIFI, SAIDI and CAIDI of 2% in 2007 relative to the 2006 performance level and by 3%, relative to the 2005 performance level, in each subsequent year until 2009. Accordingly, the target set by the OUR is shown in Table 3.2 below.

**Table 3.2: The Office targets for the Q-Factor 2006 – 2009**

| Year | Target SAIDI | Target SAIFI | Target CAIDI |
|------|--------------|--------------|--------------|
| 2006 | SAIDI_2005 | SAIFI_2005 | CAIDI_2004/5 |
| 2007 | SAIDI_2005 * (1 – 0.02) | SAIFI_2005* (1 – 0.02) | CAIDI_2005* (1 – 0.02) |
| 2008 | SAIDI_2005* (1 – 0.05) | SAIFI_2005* (1 – 0.05) | CAIDI_2005* (1 – 0.05) |
| 2009 | SAIDI_2005* (1 – 0.08) | SAIFI_2005* (1 – 0.08) | CAIDI_2005* (1 – 0.08) |

Table 3.3 below gives an indication of the variability of the monthly indices as per the 2008 submission for the annual adjustment.

**Table 3.3: Variability of Monthly Indices for 2007**

|  | SAIDI | SAIFI | CAIDI |
|------|-------|-------|-------|
| **Mean** | 250.63 | 1.99 | 121.39 |
| **Standard Deviation** | 141.58 | 0.74 | 28.90 |

The Q-factor performance versus the 2007 target is outlined below. It is based on the data submitted by JPS to evaluate the performance indices and on the 2006 Determination that the trigger point for calculation of reward or penalties is a 10% variance of the various indices.

**Table 3.4: Actual 2007 Q-factor performance vs. the 2007 Target**

| Index | Performance | Reward/Penalty |
|-------|-------------|----------------|
| SAIDI | improved by 10% | 0 Quality Points |
| SAIFI | improved by 33% | 3 Quality Points |
| CAIDI | worsened by 37% | - 3 Quality Points |

**Based on the risk–reward scenario and the available data presented, the Office agrees that the Q-Factor should be Zero for this adjustment period.**

## 3.4    Force Majeure and Major Events

The Office agrees with JPS that Force Majeure and major events outside of the reasonable control of JPS should be excluded from the reliability indices calculation. However, in order to ensure proper treatment of the Force Majeure and major events, the Office has Determined that JPS:

▪    divide the entire T&D system into operational areas and report reliability indices for each defined area as well as for the total system;

▪    formally request exclusion of service interruptions for reporting purposes by proving that an outage qualifies as a *Force Majeure* event in a particular area; and

▪    in its application to the Office for the declaration that an event can be classified as *Force Majeure* indicate the actual timeframe in which the major event began and ended.

The above requirements are geared to complement the following safeguards to prevent the company from:

▪    Combining separate events as a major event.

▪    Excluding outage data from all geographical or operational areas when the major event that has occurred is localized to one geographical or operational area.

▪    Excluding all outages that took place on any day in which a major event took place, regardless of the actual timeframe in which the major event began and ended.

## 3.5    The Office's Position on JPS' Z-Factor Proposal

The Office has determined that the restoration costs associated with the hurricane represents a claim against the Hurricane Sinking Fund and not a liability to be recovered through the Z-Factor clause. The Office is of the view that by recovering the hurricane costs from the Sinking Fund the costs of the hurricane event will be captured by the price cap mechanism, as defined in Schedule 3, (Exhibit 1) of the All-Island Electricity Licence (2001):

The Z-factor is the allowed percentage increase in the price cap index due to events that:

▪    affect the Licensee's costs;

▪    are not due to the Licensee's  managerial decisions; and

▪    are not captured by the other elements in the price cap mechanism.

Therefore as stipulated by the Licence definition above there should only be a Z-factor claim if the hurricane costs could not be captured by the Sinking Fund, an element of the price cap mechanism.

Therefore for the purpose of this Determination, Z = 0.

Having Determined that Z = 0, for the purpose of this adjustment, the Office will conduct its due diligence on the current claim made by JPS for recovery of costs incurred as a consequence of Hurricane Dean and will hand down its Decision in that regard before September 1, 2008. The Office reaffirms that its decision in regard to the quantum allowed to be recovered will be consistent with the principles set out in its Decision Ele 2005/05.

# 4. Inclusion of MAIFI as a Reliability Index

JPS claimed that additional resources are likely to be required as it relates to measuring MAIFI as determined by the OUR and that JPS and the OUR will have to discuss in much further detail.

MAIFI is an industry-defined term that attempts to identify the frequency of all momentary outages that a customer will experience during a given timeframe. It is calculated by summing all customer interruptions for momentary outages (those of durations of 5 minutes or less) and dividing by all customers served within the affected area.

$$\text{MAIFI} = \frac{\text{Total Number of Momentary Customer Interruptions}}{\text{Total Number of Customers Served}}$$

This index represents the frequency of momentary interruptions seen by the customer.

Momentary interruptions are defined in IEEE Std. 1366 as those that result from each single operation of an interrupting device such as a recloser. MAIFI measures data on momentary interruptions that result in a zero voltage. For example, two circuit-breaker-open operations equals two momentary interruptions. In JPS' opinion, obtaining the momentary information accurately will sometimes be quite difficult because some reclosers and distribution breakers are not equipped with SCADA and during times when there is communication failure to that recloser no data will be captured.

## 4.1 Current Data Collection Systems for MAIFI

JPS collects all interruptions due to permanent trips in the Outage Database at the System Control Centre. These include interruptions due to under-frequency, planned and forced transmission and distribution outages. Some of these interruptions are less than 5 minutes in duration and will be added to MAIFI.

JPS also stores on the SCADA historian, all the recloser cycling for substations that are monitored. This data will also be used to compute MAIFI. However, not all the substations are on SCADA and recloser cycling, thus data from such substations will not be available for MAIFI computation. Similarly, whenever there is a break in communication to a substation the recloser cycling operation is not captured.

JPS requires the OUR to state whether recloser cycling operation is to be included in MAIFI. JPS would then be required to invest in communication equipment and relay/breaker upgrades to equip the substations that are not currently monitored. Likewise, ongoing investment in the communication infrastructure will be required to ensure 100% availability and no data loss. JPS also requires the OUR to state how far downstream into the distribution system they require the collection of momentary interruptions; specifically

to fuse cutout switches. This will guide the assessment as to additional infrastructure equipment required by JPS to ensure compliance with the OUR's request and the resulting additional capital requirements.

JPS has indicated that it is presently embarking on 100% visibility project that will see all substations being enabled with SCADA visibility. According to JPS, the project should be completed by end of the first quarter of 2009. However, the Company was quick to point out that such development would not necessitate a 100% redundant system and as such the accurate calculations of MAIFI would still be subject to the full availability of the communication and monitoring systems.

## 4.2    Challenges for JPS with MAIFI

Recognizing that less sensitive time measurement systems are required for the computation of SAIFI, SAIDI, and CAIDI, as compared to MAIFI, and that it was not originally included in the determination of Q, JPS' primary focus has been in relation to improving the customer count information.

Generally, the primary industry cause of momentary outages is classified as unknown. This is typically the nature of intermittent faults, as they are difficult to detect and without classification it makes analysis and strategies to attack the problem resource intensive which may not necessarily lead to a reduction of MAIFI.

The other major contributor to recloser cycling is inclement weather (lightning, heavy wind and/or rain) and because JPS' distribution system is overhead it is exposed to the elements. These momentary interruptions will generally pass with the weather system and efforts to reduce MAIFI prove resource-intensive and may not result in a permanent solution.

If these two conditions continue to be the main drivers of MAIFI for JPS then improvement in MAIFI may not be feasible and JPS may not be properly incentivised under a Q-factor type adjustment for MAIFI.

## 4.3    Offices Response to MAIFI Concerns

The Office is of the opinion that with the increasing vulnerability of critical machinery and systems to temporary loss of power, there should be incentives to direct the Company along the path of improved quality in this area.

The Office takes note of the following concerns raised by JPS in the 2008 submission as were previously raised in the 2007 submission.

*Generally, the primary industry cause of momentary outages is classified as unknown. This is typically the nature of intermittent faults, as they are difficult to detect and without classification it makes analysis and strategies to attack the problem resource-intensive which may not necessarily lead to a reduction of MAIFI.*

*The other major contributor to recloser cycling is inclement weather (lightning, heavy wind and/or rain) and because JPS' distribution system is overhead it is exposed to the elements. These momentary interruptions will generally pass with the weather system and efforts to reduce MAIFI prove resource intensive and may not result in a permanent solution.*

The overwhelming majority of momentary outages on most electric system surveyed by OUR, are breaker operations, which restore service automatically. As a result, such outages are temporary in nature and require less operational and repair resources. Due to their temporary nature, it is quite common not to be able to determine the cause. Hence the OUR does not share the view that to correct these momentary outages will result in additional resources over and above what is required to operate an efficient system that JPS is required to operate. Additionally, recloser cycling operation is to be included in MAIFI.

Furthermore, the Office is cognizant of the fact that information can vary across countries due to:

- The capability of different utility businesses to collect different data on the network.

- The costs of gathering some information compared with the benefits of having detailed data.

- Historical availability of data.

- Policy decisions on the appropriateness of including different extreme events.

Recognizing the difficulties that have been experienced in the measurement of the other indices, the Office refers to the 2006 Determination (Ele 2006/2) which directs that MAIFI be computed annually over the period 2006 – 2009 and the index used as the baseline for incorporating MAIFI in the computation of the value of 'Q' in the 2009 rate review. The Office will make itself available to discuss the implementation strategy as necessary in the context of the service standard information outlined in bullet points above. The OUR will then assess and determine how far downstream into the distribution system it will require for the collection of momentary interruptions.

# 5.     Tariff Basket Compliance

JPS is required to increase the weighted average of prices by less than or equal to the increase in the electricity price escalation index PCI. The PCI sets the limits for movements in the base tariffs. On a monthly basis, adjustments are made for the effects of movements in the Foreign Exchange rate. It is to be noted that the effective change in the non-fuel rates is the dPCI less the cumulative movements due to Foreign Exchange rate changes.

The weights used are the 2007 revenue shares.

The tariff basket compliance must satisfy the following formulae:

PCI$\geq$API; where

API is the weighted average price of the actual tariff basket prices

The annual adjustment factor for the non-fuel base rates of 8.94% derived from dPCI = (dI = 11.66, - X =2.72, -Q = 0) is applied to the total basket. The adjustment in each tariff is weighted and hence the adjustment across rates is dependent on the relative weights in relation to the total tariff basket as shown in table 5.1 below.

**Table 5.1: Total Non-Fuel Tariff Basket**

| Class | Block/ Rate Option | Customer Charge Revenue (J$'000) | Energy Revenue (J$'000) | Hurricane Recovery Charge (J$'000) | Demand (KVA) Revenue (J$'000) | | | | Total Demand Revenue (J$'000) | Total Revenues (J$'000) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Std. | Off-Peak | Part Peak | On-Peak | | |
| Rate 10 LV | <100 kWh | 15,109 | 2,034,417 | 28,720 | | | | | | 2,078,247 |
| Rate 10 LV | >100 kWh | 28,060 | 6,640,108 | 53,337 | | | | | | 6,721,505 |
| Rate 20 LV | | 11,570 | 5,931,145 | 53,860 | | | | | | 5,996,576 |
| Rate 40A LV | | 693 | 338,447 | 4,767 | 91,852 | | | | 91,852 | 435,760 |
| Rate 40 LV | STD | 3,104 | 1,262,422 | 43,469 | 1,921,784 | | | | 1,921,784 | 3,230,780 |
| Rate 40 LV | TOU | 360 | 341,510 | 11,759 | | 16,996 | 179,025 | 181,975 | 377,996 | 731,626 |
| Rate 50 MV | STD | 222 | 613,481 | 23,432 | 795,159 | | | | 795,159 | 1,432,294 |
| Rate 50 MV | TOU | 69 | 277,791 | 10,610 | | 16,669 | 169,666 | 178,455 | 364,789 | 653,259 |
| Rate 60 LV | | 242 | 669,170 | 5,119 | | | | | | 674,532 |
| **TOTAL** | | **59,431** | **18,108,493** | **235,074** | **2,808,795** | **33,665** | **348,691** | **360,429** | **3,551,580** | **21,954,578** |

Table 5.2 below shows the annual adjustment factor that JPS proposes to apply to each individual tariff.

**Table 5.2: Annual Non-Fuel Inflation Adjustment per Tariff, net of (dI-X)**

| Class | Block/ Rate Option | Customer Charge (J$/Month) | Energy Charge (J$/kWh) | Hurricane Recovery Charge (J$/kWh) | Demand (KVA) Revenue (J$/kVA) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Std. | Off-Peak | Part Peak | On-Peak |
| Rate 10 LV | <100 kWh | 10.00% | 8.66% | 0.00% | | | | |
| Rate 10 LV | >100 kWh | 10.00% | 8.66% | 0.00% | | | | |
| Rate 20 LV | | 10.00% | 8.94% | 0.00% | | | | |
| Rate 40A LV | | 10.00% | 14.00% | 0.00% | 8.94% | | | |
| Rate 40 LV | STD | 10.00% | 10.00% | 0.00% | 8.94% | | | |
| Rate 40 LV | TOU | 10.00% | 10.00% | 0.00% | | 8.94% | 8.94% | 8.94% |
| Rate 50 MV | STD | 10.00% | 10.00% | 0.00% | 8.94% | | | |
| Rate 50 MV | TOU | 10.00% | 10.00% | 0.00% | | 8.94% | 8.94% | 8.94% |
| Rate 60 LV | STREET-LIGHTS | 10.00% | 8.94% | 0.00% | | | | |
| Rate 60 LV | TRAFFIC -LIGHTS | 10.00% | 8.94% | 0.00% | | | | |

It is a requirement that when aggregated the weighted adjustment proposed by JPS should equate to the annual adjustment factor (8.94%). Confirmation of this is shown in Table 5.3 below.

**Table 5.3: Weighted Non-Fuel Inflation Adjustment (dI – X)**

| Class | Block/ Rate Option | Customer Charge (J$/Month) | Energy Charge (J$/kWh) | Hurricane Recovery Charge (J$/kWh) | Demand (KVA) Revenue (J$/kVA) | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Std. | Off-Peak | Part Peak | On-Peak | |
| Rate 10 LV | <100 kWh | 0.01% | 0.80% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.81%** |
| Rate 10 LV | >100 kWh | 0.01% | 2.62% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **2.63%** |
| Rate 20 LV | | 0.01% | 2.42% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **2.42%** |
| Rate 40A LV | | 0.00% | 0.22% | 0.00% | 0.04% | 0.00% | 0.00% | 0.00% | **0.25%** |
| Rate 40 LV | STD | 0.00% | 0.58% | 0.00% | 0.79% | 0.00% | 0.00% | 0.00% | **1.37%** |
| Rate 40 LV | TOU | 0.00% | 0.16% | 0.00% | 0.00% | 0.01% | 0.07% | 0.07% | **0.31%** |
| Rate 50 MV | STD | 0.00% | 0.28% | 0.00% | 0.32% | 0.00% | 0.00% | 0.00% | **0.60%** |
| Rate 50 MV | TOU | 0.00% | 0.13% | 0.00% | 0.00% | 0.01% | 0.07% | 0.07% | **0.28%** |
| Rate 60 LV | | 0.00% | 0.27% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | **0.27%** |
| **TOTAL** | | **0.03%** | **7.46%** | **0.00%** | **1.15%** | **0.01%** | **0.14%** | **0.15%** | **8.94%** |

The non-fuel base rates approved by the Office in the 2007 Decision, which were used to derive the 2007 non-fuel basket, are shown in Table 5.4 below.

**Table 5.4: Approved Non-Fuel Tariffs for 2007**

| Class | Block/ Rate Option | Customer Charge (J$/Month) | Energy Charge (J$/kWh) | Hurricane Recovery Charge (J$/kWh) | Demand (KVA) Revenue (J$/kVA) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Std. | Off-Peak | Part Peak | On-Peak |
| Rate 10 LV | <100 kWh | 82 | 5.249 | 0.074 | | | | |
| Rate 10 LV | >100 kWh | 82 | 9.225 | 0.074 | | | | |
| Rate 20 LV | | 188 | 8.160 | 0.074 | | | | |
| Rate 40A LV | | 2610 | 5.261 | 0.074 | 328 | | | |
| Rate 40 LV | STD | 2610 | 2.152 | 0.074 | 839 | | | |
| Rate 40 LV | TOU | 2610 | 2.152 | 0.074 | | 34 | 366 | 468 |
| Rate 50 MV | STD | 2610 | 1.940 | 0.074 | 755 | | | |
| Rate 50 MV | TOU | 2610 | 1.940 | 0.074 | | 31 | 329 | 421 |
| Rate 60 LV | STREET-LIGHTS | 684 | 9.687 | 0.074 | | | | |
| Rate 60 LV | TRAFFIC - LIGHTS | 684 | 6.257 | 0.074 | | | | |

Table 5.5 below shows the inflation and X-factor adjusted rates after applying the individual tariff increases determined by tariff basket weights. This essentially captures the annual inflationary and efficiency change (dI - X) in the non-fuel electricity prices prior to the application of the Z-Factor. Accordingly, this represents (dI - Q – X), where Q = 0 and X= -2.72 as at June 2007.

The Office has determined that the annual Sinking Fund be increased from US$3 million to US$5 million per annum based on the findings of the OUR's 2006 Rate Determination Notice, Document No. Ele 2006/2 Section 4.1 "Providing for an adequate Sinking Fund". The Office is mindful of the challenges imposed on consumers in the context of the wider issues affecting the economy but lack of action on this issue has the potential of causing even greater challenges to consumers should significant damage occur to the company's Transmission and Distribution system as a result of such acts of God as hurricanes. The increase in the Fund from US$3 million to US$5 million per annum translates to an increase in the non-fuel rate of J$0.0441/kWh or 0.65% and will be applied to the energy charge only (i.e. no impact on customer and demand charges). Accordingly, the full impact of the annual PBRM on the non-fuel rates after including the Hurricane Sinking Fund increase in the energy charge is shown in Table 5.6 below.

## Table 5.5: Inflation and X-Factor Adjusted Rates (dI - X)

| Class | Block/ Rate Option | Customer Charge (J$/Month) | Energy Charge (J$/kWh) | Hurricane Recovery Charge (J$/kWh) | Demand (KVA) Revenue (J$/kVA) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Std. | Off-Peak | Part Peak | On-Peak |
| Rate 10 LV | <100 kWh | 90 | 5.703 | 0.078 | | | | |
| Rate 10 LV | >100 kWh | 90 | 10.024 | 0.078 | | | | |
| Rate 20 LV | | 207 | 8.890 | 0.078 | | | | |
| Rate 40A LV | | 2871 | 5.998 | 0.078 | 357 | | | |
| Rate 40 LV | STD | 2871 | 2.367 | 0.078 | 914 | | | |
| Rate 40 LV | TOU | 2871 | 2.367 | 0.078 | | 37 | 399 | 510 |
| Rate 50 MV | STD | 2871 | 2.134 | 0.078 | 822 | | | |
| Rate 50 MV | TOU | 2871 | 2.134 | 0.078 | | 34 | 358 | 459 |
| Rate 60 LV | STREET-LIGHTS | 752 | 10.553 | 0.078 | | | | |
| Rate 60 LV | TRAFFIC - LIGHTS | 752 | 7.111 | 0.078 | | | | |

## Table 5.6: Summary of 2008/2009 Non-Fuel Tariffs (dI ± X ± Q± Z)

| Class | Block/ Rate Option | Customer Charge (J$/Month) | Energy Charge (J$/kWh) | Hurricane Recovery Charge (J$/kWh) | Demand (KVA) Revenue (J$/kVA) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Std. | Off-Peak | Part Peak | On-Peak |
| Rate 10 LV | <100 kWh | 90 | 5.747 | 0.078 | | | | |
| Rate 10 LV | >100 kWh | 90 | 10.068 | 0.078 | | | | |
| Rate 20 LV | | 207 | 8.934 | 0.078 | | | | |
| Rate 40A LV | | 2871 | 6.042 | 0.078 | 357 | | | |
| Rate 40 LV | STD | 2871 | 2.411 | 0.078 | 914 | | | |
| Rate 40 LV | TOU | 2871 | 2.411 | 0.078 | | 37 | 399 | 510 |
| Rate 50 MV | STD | 2871 | 2.178 | 0.078 | 822 | | | |
| Rate 50 MV | TOU | 2871 | 2.178 | 0.078 | | 34 | 358 | 459 |
| Rate 60 LV | STREET-LIGHTS | 752 | 10.597 | 0.078 | | | | |
| Rate 60 LV | TRAFFIC - LIGHTS | 752 | 7.155 | 0.078 | | | | |

The rates shown in Table 5.6 are consistent with the price cap tariff compliance constraint and represent the maximum allowed under the cap, that is, the weighted average increase of the tariff basket is exactly equal to the price adjustment factor, (1+ dPCI), and hence there is no unused portion of the adjustment to be carried forward to the following year.

# 6.    The Office Determination

The following is a summary of the Office's Determination on the JPS rate adjustments proposals:

1.  The 2008 annual non-fuel tariff adjustment incorporates changes in relation to inflation, foreign exchange movement and adjustments for the 'X', 'Q' and 'Z' factors. This represents the final annual tariff adjustment under the regulatory framework which became effective June 1, 2004 and ends 2009. This year has been marked by relatively high inflation, with U.S. and Jamaica inflation rates of **4.03%** and **19.92%** respectively. The 2.72% productivity gain, determined by the Office in the June 1, 2004 Determination, will be passed on to customers. Additionally, the Hurricane recovery charge of $457.5 million over a twenty-four-month period is still in effect as approved by the Office in the 2007 OUR's Determination Notice (Ele2007/1) and will remain in effect for another 12 months as of June 2008. Further, the approved Hurricane Ivan recovery charge of 0.074¢ per kWh was adjusted to 0.078¢ per kWh (due to the effect of the resetting of the Base Exchange rate from J$68: US$1 to J$71.50: US$1) and will also be passed on to the consumer. Additionally, the increase in the Hurricane Sinking Fund from US$3 million per annum to US$5 million per annum will result in an adjustment of 4.41¢ per kWh. The overall adjustments will result in an average increase of 5.74% in the non-fuel rates.

    Accordingly,  while there is an 11.66% weighted average increase in inflation and foreign exchange rate under the annual tariff adjustment mechanism, this will be offset by the 2.72% productivity factor, and 3.91% for the cumulative monthly adjustment due to foreign exchange movements resulting in an effective increase of 5.03% in the non-fuel tariffs in June 2008. Given current fuel prices (at April 2008) the impact of this adjustment on a typical residential bill is expected to be under 2%.

## Table 6.1: Inflation Adjusted Base Non-Fuel Tariffs (dI ± X ± Q± Z)

| Class | Block/ Rate Option | Customer Charge (J$/Month) | Energy Charge (J$/kWh) | Hurricane Recovery Charge (J$/kWh) | Demand (KVA) Revenue (J$/kVA) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Std. | Off-Peak | Part Peak | On-Peak |
| Rate 10 LV | <100 kWh | 90 | 5.747 | 0.078 | | | | |
| Rate 10 LV | >100 kWh | 90 | 10.068 | 0.078 | | | | |
| Rate 20 LV | | 207 | 8.934 | 0.078 | | | | |
| Rate 40A LV | | 2871 | 6.042 | 0.078 | 357 | | | |
| Rate 40 LV | STD | 2871 | 2.411 | 0.078 | 914 | | | |
| Rate 40 LV | TOU | 2871 | 2.411 | 0.078 | | 37 | 399 | 510 |
| Rate 50 MV | STD | 2871 | 2.178 | 0.078 | 822 | | | |
| Rate 50 MV | TOU | 2871 | 2.178 | 0.078 | | 34 | 358 | 459 |
| Rate 60 LV | STREET-LIGHTS | 752 | 10.597 | 0.078 | | | | |
| Rate 60 LV | TRAFFIC - LIGHTS | 752 | 7.155 | 0.078 | | | | |

2.  The Office determines that the Q-factor shall be set at Zero for this adjustment period.

3.  The Office determines that Forced Majeure and major events outside of the reasonable control of JPS be excluded from the reliability indices calculation. However, in order to ensure proper treatment of the Force Majeure and major events, the Office requires that:

    ▪ JPS divides up the entire distribution system into operational areas and should report reliability indices for each defined area and for the system.

    ▪ JPS formally requests exclusion of service interruptions for reporting purposes by proving that an outage qualifies as a major event.

    ▪ JPS, in the application to the Office for a declaration that the event be classified as Force Majeure or major event, indicate the actual timeframe in which the major event began and ended.

The Office has Determined that for this adjustment period, $Z = 0$.

Having Determined that $Z = 0$, the Office will conduct its due diligence on the claim submitted by JPS for recovery of costs incurred as a consequence of Hurricane Dean and will hand down its Decision in that regard before September 1, 2008. The Office reaffirms that its Decision in regard to the quantum allowed to be recovered will be consistent with the principles set out in its Decision Ele 2005/05.