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Office of Utilities Regulation

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**Jamaica Public Service Company Limited  
Annual Tariff Adjustment 2005**

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**Determination Notice**

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**OFFICE OF UTILITIES REGULATION**

August 24, 2005

*Jamaica Public Service Company Limited  
Annual Tariff Adjustment 2005  
Determination Notice  
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**1. PURPOSE OF DOCUMENT**

This document sets out the Office’s decisions taken by the Office on issues related to the annual price adjustment (2005) 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 on the dates as herein written.

On behalf of the Office:

.....  
J Paul Morgan  
**Director General**  
Date

## Abstract

In June 2004 the Office of Utilities Regulation (“the Office”) completed its first tariff review under the price cap control mechanism set out in schedule 3 of the Jamaica Public Service Company Limited (JPS) All-Island Electricity Licence (“the Licence”). In its determination the Office set the average **non-fuel rate** at J\$5.627/kWh. The methodology for the annual rate adjustment is provided in the rate schedule published June 1, 2004. This is the first annual Tariff adjustment under the price cap tariff regime. In the 2004 decision, the Office determined 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 is 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. In the draft determination issued on August 1, 2005 as well as in the accompanying correspondence, the Office confirmed the 6.43 percent adjustment which the company was entitled to implement on June 1, 2005. The Office suggested that in light of subsequent discussions in relation to the Insurance claim filed by JPS the company might have caused to delay immediate implementation. In light of this the company delayed implementation until August 1, 2005.

It must be noted that the annual adjustment applies to the non fuel rate only and that the fuel portion of the bill, which is a pass through item, is not impacted in any way, by this determination.

It should be emphasized that consideration of the annual adjustment does not require extensive review or consultation by the Office as the mechanism for such a review is already fixed in the licence and the current tariff. Consideration of and the decision in respect of the Q- factor and the Z-factor however require analyses and reasoning for the decisions taken.

In its submissions for the Q-factor to be set at zero in this 2005 annual tariff submission JPS has provided methodology and nine month’s data for 2004 as the baseline to calculate the relevant indices (SAIDI, SAIFI and CAIDI). JPS has proposed that this data form the basis for measuring improvements or deterioration in the quality of service provided to customers for the remainder of the tariff period. The Office has deferred the decision on the Q-factor indices from August 1, 2005 to October 2005.

Additionally, in the absence of adequate protection from the self insurance fund and given the extent of damage incurred by the Hurricane (Ivan) of September 10, 2004, JPS made a filing for recovery of the costs incurred through the Z-factor, as defined in Schedule 3 (Exhibit 1) of the Licence: The decision in respect of the JPS filing in this regard is provided separately in the determination Document Ele 2005/05.

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## **1.0 Summary of JPS proposal for Annual Adjustment**

The Office received a filing from JPS dated 5th April 2005 for the annual adjustment to tariffs in accordance with the terms of the All Island Licence<sup>1</sup>. The company, in its submission, sought approval for the following:

- An adjustment of 6.43% on the June 2004 non-fuel base rates in keeping with the annual adjustment clause contained in the rate schedule
- An embedded Z-factor rate adjustment of 46.59 ¢ per kWh which includes the hurricane restoration costs, the under-recovered embedded costs in the non-fuel revenue requirement and the opportunity cost of capital.
- A Q-factor whose value will be based upon actual values of SAIDI, SAIFI and CAIDI using 2004/2005 data as baseline with each index improving by 2% annually relative to the baseline data.

## **1.1 Summary of the Office's Analysis**

### **1.1.1 Performance Base Ratemaking Mechanism (PBRM)**

Effective June 1, 2005 and annually thereafter, JPS is permitted to make an adjustment to the non-fuel base rate on the basis of the formulae below.

$$\text{ABNF}_y = \text{ABNF}_{y-1} (1 + \text{dPCI})$$

Where:

ABNF<sub>y</sub> = Adjusted Non-Fuel Base Rate for Year “y”

ABNF<sub>y-1</sub> = 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

The annual PBRM filing provides for the annual rate of change in non-fuel electricity prices (dPCI) to be determined through the following formula:

$$\text{dPCI} = \text{dI} \pm \text{X} \pm \text{Q} \pm \text{Z}$$

where

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

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

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<sup>1</sup> Copy of JPS submission will be made available on the OUR's website  
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- 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).

The annual inflation adjustment for base non-fuel tariffs is computed as follows:

$$b_1 = b_0 [1 + dI]$$

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

where:

- $b_0$  = Base non-fuel tariff at time period  $t = 0$
- $b_1$  = Base non-fuel tariff at time period  $t = 1$
- $e$  = 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

### **1.1.2 Details of the current year annual inflation adjustment (dI)**

The application of the above formula results in an inflation adjustment factor of **6.43%** derived using the following factors:

- The Jamaican twelve month point to point inflation rate to February 28, 2005 of 12.68%, derived from the most recent CPI data<sup>2</sup> ;
- The U.S. twelve month point to point inflation rate to February 28, 2005 of 3.01%, derived from the US Department of Labour statistical data<sup>3</sup>; and

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<sup>2</sup> Obtained from the Statistical Institute of Jamaica, CPI Statistical Bulletin February 2005)

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- The change in the base exchange rate from J\$61:US\$1 to J\$62:US\$1

### Annual inflation adjustment (dI) calculation

**Table 1.1**

#### **Escalation Factor**

<b>Line</b>	<b>Description</b>	<b>Formula</b>	<b>Value</b>
	Base Exchange Rate		
<b>L1</b>	Current		<b>61</b>
<b>L2</b>	Proposed		<b>62</b>
	Jamaica Inflation Index		
<b>L3</b>	CPI @ Feb 2005		<b>2,041.7</b>
<b>L4</b>	CPI @ Feb 2004		<b>1,811.9</b>
	US Inflation Index <sup>3</sup>		
<b>L5</b>	CPI @ Feb 2005		<b>191.8</b>
<b>L6</b>	CPI @ Feb 2004		<b>186.2</b>
<b>L7</b>	Exchange Rate Factor	$(L2-L1)/L1$	<b>1.64%</b>
<b>L8</b>	Jamaican Inflation Factor	$(L3-L4)/L4$	<b>12.68%</b>
<b>L9</b>	US Inflation Factor	$(L5-L6)/L6$	<b>3.01%</b>
	Escalation Factor	$0.76*L7*(1+0.922*L9)+0.76*0.922*L9+0.24*L8$	<b>6.43%</b>

The annual inflation adjustment factor calculated in Table 1.1 for the 2005 tariff adjustment was 6.43%. This adjustment should have become effective on June 1, 2005. However, as the adjustment was not implemented on the 1<sup>st</sup> of June but was delayed to 1<sup>st</sup> August in the expectation that the Office would have handed down a decision regarding the hurricane cost recovery claim under the Z-factor, it is appropriate to increase the adjustment factor due to the two-month delay. In the implementation of the tariffs it is now necessary to increase the adjustment factor by two-tenths, since the revenues associated with the two month period must now be recovered over the remaining ten months of the tariff period. This adjustment results in a new escalation factor as follows:

$$\text{Revised dI} = 6.43\% * \frac{12}{10} = 7.72\%$$

#### **1.1.3 X – Factor component of PBRM**

The X- factor is based on the expected productivity gains of JPS. The X- factor is to equal the difference in the expected total factor productivity growth of the Licensed Business and the general total factor productivity growth of firms whose price index of outputs reflect the escalation measure ‘dI’.

The X- factor was determined by the Office to be 2.72%. However this factor becomes applicable in 2006 and is therefore equal to zero in this 2005 annual tariff adjustment.

#### **1.1.4 Q – Factor component of PBRM**

Decisions on the Q – Factor will be issued by October 1, 2005.

#### **1.1.5 Z – Factor component of PBRM**

Decisions in regard to the Z-factor is set out in decision Elec 2005/05..

### **2.0 Tariff Basket Compliance**

The tariff basket is the mechanism for weighting increases in individual tariff. The company is required to increase the weighted average of these prices by less than or equal to the increase in the electricity price escalation index dPCI. The weights used are the 2004 revenue shares.

Mathematically, the tariff basket compliance must satisfy the following formulae;

$$(1 + dPCI) \geq API ; \text{ where}$$

API is the weighted average price of the tariff basket prices

The annual adjustment factor of 7.72% derived from  $dPCI = (dI = 7.72\%, - X = 0, -Q = 0)$  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.



## Total Non-Fuel Tariff Basket

Table 2.1

Class			Customer Charge Revenue (J\$'000)	Energy Revenue (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	0-100 kWh	9,760	2,034,138						2,043,898
Rate 10	LV	> 100 kWh	22,774	5,071,392						5,094,166
Rate 20	LV		8,071	4,284,030						4,292,102
Rate 40A	LV		924	304,547	116,282				116,282	421,753
Rate 40	LV	STD	1,808	865,311	1,300,482				1,300,482	2,167,600
Rate 40	LV	TOU	281	226,775		11,423	114,583	125,624	251,629	478,685
Rate 50	MV	STD	133	323,928	399,566				399,566	723,628
Rate 50	MV	TOU	75	245,289		12,499	124,712	131,321	268,531	513,894
Rate 60	LV		107	506,578						506,685
Total			43,934	13,861,987	1,816,331	23,921	239,294	256,944	2,336,490	16,242,411

Using the revised adjustment factor of 7.72%, the revised annual adjustment factor to each individual tariff in Table 2.2 below shows the annual adjustment factor that JPS proposes to apply to each individual tariff.

It must be noted specifically, that in addressing the adjustment in 2006, the base tariff used will be that as if the tariff had been adjusted by 6.43% in 2005.

Table 2.2

### Annual Non-Fuel Inflation Adjustment per tariff

Class	Block/ Rate Option	Customer Charge (J\$/kWh)	Energy (J\$/kWh)	Demand (J\$/KVA)			
				Std.	Off-Peak	Part-Peak	On-Peak
Rate 10	0-100 kWh	5.72%	5.72%				
Rate 10	>100 kWh	5.72%	5.72%				
Rate 20	LV	9.72%	9.72%				
Rate 40A	LV	8.90%	8.90%	8.90%			
Rate 40	LV - Std	8.90%	8.90%	8.90%			
Rate 40	LV - TOU	8.90%	8.90%		8.90%	8.90%	8.90%
Rate 50	MV - Std	8.90%	8.90%	8.90%			
Rate 50	MV - TOU	8.90%	8.90%		8.90%	8.90%	8.90%
Rate 60	STREET-LIGHTS	8.90%	8.90%				
Rate 60	TRAFFIC-LIGHTS	8.90%	8.90%				

It is a requirement that when aggregated the weighted adjustment proposed by JPS should equate to the revised annual adjustment factor (7.72%). Proof of this is shown below in table 2.3.

**Table 2.3**

**Weighted Non-Fuel Inflation Adjustment**

Class	Block/ Rate Option	Customer Charge (J\$/kWh)	Energy (J\$/kWh)	Demand (J\$/KVA)				Total
				Std.	Off- Peak	Part Peak	On-Peak	
Rate 10	0-100 kWh	0.0%	0.72%					0.72%
Rate 10	>100 kWh	0.0%	1.79%					1.79%
Rate 20	LV	0.0%	2.57%					2.57%
Rate 40A	LV	0.0%	0.17%	0.06%				0.23%
Rate 40	LV - Std	0.0%	0.47%	0.72%				1.19%
Rate 40	LV - TOU	0.0%	0.12%	0.00%	0.01%	0.06%	0.07%	0.26%
Rate 50	MV - Std	0.0%	0.18%	0.22%	0.00%	0.00%	0.00%	0.40%
Rate 50	MV - TOU	0.0%	0.13%	0.00%	0.01%	0.07%	0.07%	0.28%
Rate 60	LV	0.0%	0.28%	0.00%	0.00%	0.00%	0.00%	0.28%
Total		0.00%	6.43%	1.00%	0.02%	0.13%	0.14%	7.72%

The current non-fuel base rates approved by the Office in the 2004 decision are shown below.

**Table 2.4**

**Approved Non-Fuel Tariffs for 2004**

Class	Block/ Rate Option	Customer Charge J\$/ kWh	Energy J\$/kWh	Demand J\$/KVA			
				Std.	Off- Peak	Part- Peak	On- Peak
Rate 10	LV	0-100 kWh	68	4.549			
Rate 10	LV	>100 kWh	68	8.008			
Rate 20	LV		150	6.770			
Rate 40A	LV		2,100	4.250	276		
Rate 40	LV - Std		2,100	1.728	707		
Rate 40	LV - TOU		2,100	1.728		29	308
Rate 50	MV - Std		2,100	1.556	636		
Rate 50	MV - TOU		2,100	1.556		26	277
Rate 60	STREET- LIGHTS		550	8.161			
Rate 60	TRAFFIC- LIGHTS		550	5.494			

Table 2.5 shows the inflation adjusted rates after applying the individual tariff increases determined by tariff basket weights. This essentially captures the annual inflationary change (dI) effective August 1, 2005 in the non-fuel electricity prices prior to the application of the Z-factor. Accordingly, this represents  $dI - Q - X$ , where Q and X are considered to be zero as at June 2005 (but this does not take into account the effect of Z). The rates shown in table 2.5 below is consistent with the price cap tariff compliance constraint and is the maximum allowed under the cap, that is, the weighted average increase of the tariff basket is exactly equal to the price adjustment factor,  $(1 + dPCI)$ , hence there is no unused portion of the adjustment to be carried forward to the following year;

**Table 2.5**  
**Inflation Adjusted Non-Fuel Tariffs ( $dI \pm X \pm Q$ )**

Class		Block/ Rate Option	Customer Charge J\$/ kWh	Energy J\$/kWh	Demand J\$/KVA			
					Std.	Off- Peak	Part- Peak	On- Peak
Rate 10	LV	0-100 kWh	72	4.809				
Rate 10	LV	>100 kWh	72	8.466				
Rate 20	LV		165	7.428				
Rate 40A	LV		2,287	4.628	301			
Rate 40	LV - Std		2,287	1.882	770			
Rate 40	LV - TOU		2,287	1.882		32	335	429
Rate 50	MV - Std		2,287	1.694	693			
Rate 50	MV - TOU		2,287	1.694		28	302	387
Rate 60	STREET- LIGHTS		599	8.887				
Rate 60	TRAFFIC- LIGHTS		599	5.983				

### **3.0 The Office Determination**

The following is an overall summary of the Office's determination to the JPS rate adjustments proposals:

1. The current average non-fuel base rate is to be adjusted upward by 7.72% **effective** August 1, 2005.

The original annual inflation adjustment factor calculated in Table 1.1 for the 2005 tariff adjustment was 6.43%. This adjustment should have become effective on June 1, 2005. However, due to the two-month delay in the implementation of the tariffs it is now necessary to increase the adjustment factor by two-tenths, since the revenues associated with the two month period must now be recovered over the remaining ten months of the tariff period. In effect the annual adjustment at June 1, 2006 will be based on the calculated adjustment to reflect the rates that would have been in effect had the rates been adjusted by 6.43% effective June 1, 2005 determination. The revised adjustment factor of 7.72% is applied to the total basket based. The tariff basket is the mechanism for weighting increases in individual tariff. The increase in each tariff is weighted by an associated quantity for each tariff element which is the proportion of revenues associated with each tariff. 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. The adjusted rates are shown below and are valid for the period August 1, 2005 to May 30, 2006.

#### **Inflation Adjusted Non-Fuel Tariffs (dI ± X ± Q)**

Class	Block/ Rate Option	Customer Charge J\$/ kWh	Energy J\$/kWh	Demand J\$/KVA			
				Std.	Off- Peak	Part- Peak	On- Peak
Rate 10	LV	0-100 kWh	71	4.751			
Rate 10	LV	>100 kWh	71	8.363			
Rate 20	LV		163	7.341			
Rate 40A	LV		2,259	4.571	297		
Rate 40	LV - Std		2,259	1.859	760		
Rate 40	LV - TOU		2,259	1.859		31	331
Rate 50	MV - Std		2,259	1.674	684		424
Rate 50	MV - TOU		2,259	1.674		28	298
Rate 60	STREET- LIGHTS		592	8.777			
Rate 60	TRAFFIC- LIGHTS		592	5.909			

Whilst the effective rates which will form the basis for the 2006 tariff adjustment is shown in the table below

**Effective 2005 Inflation Adjusted Non-Fuel Tariffs (dI ± X ± Q)**

Class		Block/ Rate Option	Customer Charge J\$/ kWh	Energy J\$/kWh	Demand J\$/KVA			
					Std.	Off- Peak	Part- Peak	On- Peak
Rate 10	LV	0-100 kWh	71	4.751				
Rate 10	LV	>100 kWh	71	8.363				
Rate 20	LV		163	7.341				
Rate 40A	LV		2,259	4.571	297			
Rate 40	LV - Std		2,259	1.859	760			
Rate 40	LV - TOU		2,259	1.859		31	331	424
Rate 50	MV - Std		2,259	1.674	684			
Rate 50	MV - TOU		2,259	1.674		28	298	382
Rate 60	STREET- LIGHTS		592	8.777				
Rate 60	TRAFFIC- LIGHTS		592	5.909				

2. A determination on the Q factor will be handed down on October 1, 2005
3. The determination in respect of the Z factor is provided separately in Document Elec 2005/05.

## 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
IPP	-	Independent Power Purchase
kVA	-	Kilo Volt Amperes
kWh	-	Kilowatt-hours
Licence	-	The All Island Electric Licence 2001
MVA	-	Mega Volt Amperes
MW	-	Megawatt
MWh	-	Megawatt-hours
O&M	-	Operating and Maintenance
PBRM	-	Performance Based Rate-Making Mechanism
SAIDI	-	System Average Interruption Duration Index
SAIFI	-	System Average Interruption Frequency Index
T&D	-	Transmission & Distribution
TFP	-	Total Factor Productivity
TOU	-	Time of Use
WACC	-	Weighted Average Cost of Capital