THE JAMAICA PUBLIC SERVICE CO. LTD.

ANNUAL TARIFF ADJUSTMENT

SUBMISSION FOR 2013

April 3, 2013

Executive Summary

This submission is made in relation to the annual Performance-Based Rate-Making (PBRM) tariff adjustment filing for 2013, in accordance with the All Island Electric Licence 2001 (the Licence), Schedule 3, section 4, which states:

"The Licensee shall make annual filings to *the Office* at least sixty (60) days prior to the Adjustment Date [June 1, 2013]. These filings shall include the support for the performance indices, the CPI indices, and the proposed Non-Fuel Base Rates for electricity, and other information as may be necessary to support such filings…."

In accordance with the Licence and the OUR's September 18, 2009 Determination Notice, the 2013 annual non-fuel tariff adjustment will incorporate changes in relation to an annual inflation adjustment, the resetting of the base foreign exchange rate and an X factor adjustment; but it will not include any adjustments for the Q factor.

Additionally, although there was a natural disaster in 2012 (Hurricane Sandy), the damages were fairly limited (approximately US$5 million) and, as such, could be resolved from the Electricity Disaster Fund which now stands at approximately US$19 million as at the end of March 2013 (after facilitating the US$5 million draw down mentioned above). As a result, there will be no need for any Z-factor adjustment.

Recent Developments

In relation to the 2013 annual tariff submission, we wish to note that the continued viability of JPS will be dependent on a change to the regulatory approach in relation to the recovery of fuel costs. As a result of the significant under-recovery of fuel costs experienced in 2011 and 2012 (exceeding US$30 million in 2012 alone), JPS has been in financial breach of certain loan covenants since March 2012. That breach is still on-going as at the end of March 2013 and has resulted in the auditors issuing a qualified audit opinion in the audited financial statements of the Company, which casts severe doubt about the ability of the utility to continue as a viable operation. As explained in more detail in the auditors' opinion to the audited financial statements, this financial breach provides our lenders with the right to demand the immediate repayment of the loan balances (principal and accrued interest) amounting to US$430 million.

Supporting Customer Expectations, Achieving regulatory balance

In this filing JPS has sought to address the need to spur economic growth and development to stimulate sales and retain large industrial loads that ultimately translates to keeping tariffs low for all customers. Simultaneously, the Company is also seeking to adjust certain strictures in the regulatory framework that is impairing the utility's ability to recover its fuel cost, an underlying weakness in its continuing deteriorating financial performance. This relates primarily to the target for the amount of energy loss in the transmission and distribution of electricity. The majority of this energy is lost to the crime of electricity theft over which JPS has very limited control. In this submission we are urging regulatory acceptance of that fact and approval to allocate funds through state bodies that are better equipped to support a more holistic approach to combatting electricity theft, including social intervention projects.

The 2013 Annual Adjustment filing tries to balance these objectives that all work together for the objective of sustaining the long-term ability of JPS to meet customer expectations.

The proposals contained in the submission for which JPS is seeking regulatory approval are as follows:

Application of the Annual Inflation Adjustment Factor

As per Schedule 3 of the Amended and Restated All-Island Electric Licence 2011, an annual adjustment factor of 10.35% is determined to be applied to the total tariff basket for the 2013 annual adjustment. The adjustment in each tariff will be weighted, thus the adjustment across rates will be dependent on their relative weights in relation to the total tariff basket.

Introduction of a Wholesale Tariff class

JPS is proposing the introduction of a Wholesale Tariff (WT) rate class for our largest customers that represent approximately 20% of total sales. This will ensure that we provide a stimulus for growth for such large industries, which in turn will create jobs and more energy demand that ultimately lowers unit costs.

Qualifying customers must meet the following criteria:

1. Single point electricity supply with an average monthly demand of at least 1 MVA during 2012 and total annual energy usage of at least 5,000,000 kWh;
2. Multiple points of electricity supply with an average monthly demand of at least 3 MVA during 2012 and total annual energy usage of at least 10,000,000 kWh;
3. For rate 20 customers (with no demand meter), total energy usage of at least 10,000,000 kWh during 2012. Additionally, customers who meet the criterion in item 2 above would also have their rate 20 supply qualifying for the Wholesale Tariff as well.

Collectively this rate class would represent a 2.23% decrease out of the overall 10.35% (non-fuel) annual adjustment factor.

Early Payment Incentive (EPI)

JPS is seeking regulatory approval for the introduction of an Early Payment Incentive (EPI) that will reward customers who pay their bills in full and on time. This programme is in response to a collective customer request for an alternative to disconnections. Therefore, as a complementary element to this $250 incentive a similar value late payment fee has been proposed that will allow an extended period for payment to be made before disconnection.

All our customer focus group surveys have found overwhelming support for this initiative and so we anticipate regulatory approval of the programme.

Increase in the Standard Disconnection Fee

JPS proposes a 10% increase to the disconnection fee, from $1,500 to $1,650 (plus GCT). This request is made given that no increase has been granted to the disconnection fee since 2009. Please note that by contrast the cumulative Jamaican inflation adjustment for the last 3 annual tariff applications (2010 to 2013) has amounted to approximately 23%. Given the complementary introduction of the early payment incentive and late payment fee this measure is expected to have minimal impact on customers.

Illegal Reconnection Fee

For customers, who have not paid their outstanding balance within 30 days of the due date and service was suspended and are subsequently found illegally reconnected, JPS is proposing the introduction of a second fee (in addition to the disconnection/reconnection charge) of $2,000 for an illegal reconnection. This is necessary for such offending customers, as JPS often incurs additional cost to remove the service wire to prevent such customers from illegally reconnecting themselves.

Adjustment to the Fuel Weights

All customers currently pay the same standard fuel rate except for TOU customers who pay adjusted rates based on their actual time of use. JPS proposes two changes to the fuel weights with a view to giving a volume discount for the largest users of electricity (and thus fuel) on the grid, as well as to provide a further discount to shift more production to the off-peak time band. Firstly, this will offer TOU customers a 20% discount (up from 13.1% previously) for off-peak usage, while maintaining a 30% premium for on-peak usage and a 4.4% premium for partial-peak use. Secondly, we propose amending the standard fuel rate from 1 to 0.96 for all rate 40 and 50 customers (including the wholesale customers). We believe this 4% discount is reasonable given that the consumption of these customer classes is typically several hundred times larger than a typical residential customer and as such they should get some volume discount on fuel.

Rebalancing Impact of proposals

JPS acknowledges that the collective effect of the adjustment in fuel cost recovery as well as the Wholesale Tariff to large industrial customers and the annual inflation reconciliation will inevitably result in some tariff rebalancing among customer classes. We have done everything possible to keep this impact to a minimum for all customers. Indeed, by taking advantage of the EPI, the overall bill impact as a result of all of the proposed adjustments would be an average increase of 0.26% for residential customers, which represent a J$16 increase in the monthly bill of a typical residential customer.

This will not only provide greater assurance of the viability of the utility sector and help industrial customers lead the revival of the Jamaican economy, it will also provide the financial stability needed for new generation projects to proceed thereby leading to the substantial reductions in the cost of energy for all of our customers.

Glossary

ABNF	-	Adjusted Non-fuel base rate
CIS	-	Customer Information System
CPI	-	Consumer Price Index
EDF	-	Electricity Disaster Fund
GDP	-	Gross Domestic Product
GOJ	-	Government of Jamaica
GWh	-	Gigawatt-hours
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
NWC	-	National Water Commission
O&M	-	Operating and Maintenance
OCC	-	Opportunity Cost of Capital
PATH	-	Programme of Advancement Through Health and Education
PIOJ	-	Planning Institute of Jamaica
PBRM	-	Performance Based Rate-Making Mechanism
RAMI	-	Residential Advanced Metering Infrastructure
REP	-	Rural Electrification Programme Limited
RPD	-	Revenue Protection Department
T&D	-	Transmission & Distribution
TOU	-	Time of Use

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Section 1: PBRM Annual Adjustment

1.1. Overview

According to Exhibit 1 in the Licence:

"The Non-Fuel Base Rate for each customer class shall be adjusted on an annual basis, commencing June 1, 2004, *(Adjustment Date)*, pursuant to the following formula:

$ABNFy = ABNFy_{-1} (1 + dPCI)$

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

"The annual PBRM filing will follow the general framework where the annual rate of change in non-fuel electricity prices (dPCI) will be determined through the following formula:

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

Where:

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	=	the 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 dPCI above was modified on page 9 of the OUR's September 18, 2009 Determination Notice (Document No. Ele 2009/04 Det/03) as follows:

"The price cap will be applied on a global basis. This means the annual price adjustment factor will be applied to the tariff basket. The adjustment in each tariff will be weighted by an associated quantity for each element. The weighted average increase of the tariff basket should not exceed the annual price adjustment.

The base Non-Fuel tariffs shall be adjusted annually, as follows:

b1 = b0 [1 + dPCI].
b0 =Base non-fuel tariff at time period t = 0
b1 = Base non-fuel tariff at time period t = 1"

1.1 Overview (Cont'd)

The OUR's Determination Notice further states that:

> "The inflation adjustment formula (dI) to be used during the 2009 – 2014 tariff period shall remain:
>
> $$\mathbf{dI = [0.76 * \Delta e + 0.76 * 0.922 * \Delta e * i_{US} + 0.76 * 0.922 * i_{US} + 0.24 * i_j]}$$
>
> Where:
>
> Δe = 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)
>
> f_{US} = US factor = 0.76
>
> f_I = Local (Jamaica) factor = 0.24"

1.2. Current year annual inflation adjustment factor (dI – X)

The annual adjustment allows JPS to adjust its rates to reflect general movements in inflation, improvements in productivity, changes in service quality, changes in the base foreign exchange rate and where applicable an adjustment for unforeseen occurrences beyond management control not captured in the other elements of the PBRM. The following outlines JPS' proposal in relation to the components of the dPCI and its application to the non-fuel tariffs for 2013.

The application of the annual escalation adjustment formula (dI - X) will result in an increase of 10.35% to the non-fuel tariff basket, derived using the following factors:

- Jamaican point-to-point inflation (i_j) as at February 28, 2013 of 8.15%, derived from the most recent CPI data[1] **(See Appendix I);**
- U.S. point-to-point inflation rate (i_{US}) as at February 28, 2013 of 1.98%, derived from the U.S. Department of Labor statistical data[2] **(See Appendix I);** and
- The 12.57% increase in the Base Exchange Rate (Δe) from J$87.5: US$1 to J$98.5: US$1.

Table 1.1 below sets out the details of the annual escalation adjustment factor that amounts to a 10.35% increase for 2013.

[1] Obtained from the Statistical Institute of Jamaica.
[2] Obtained from U.S. Bureau of Labor Statistics website, http://data.bls.gov/cgi-bin/surveymost

1.2 Current year annual inflation adjustment factor (dI – X) (Cont'd)

Table 1.1

Annual Adjustment Clause Calculation			
Line	Description	Formula	Value
L1	Base Exchange Rate		87.50
L2	Proposed Exchange Rate		**98.50**
L3	Jamaican Inflation Index		
L4	CPI @ Feb 2013		195.0
L5	CPI @ Feb 2012		180.3
L6	US Inflation Index		
L7	CPI @ Feb 2013		232.2
L8	CPI @ Feb 2012		227.7
L9	Exchange Rate Factor	(L2-L1)/L1	12.57%
L10	Jamaican Inflation Factor	(L4-L5)/L5	8.15%
L11	US Inflation Factor	(L7-L8)/L8	1.98%
L12	Escalation Factor	0.76*(L9*(1+0.922*L11)+0.922*L11)+0.24*L10	13.07%
L13	Productivity (or X) Factor		-2.72%
L14	Escalation Adjustment net of X-Factor	(L12-L13)	10.35%

1.3. Application of the Annual Inflation Adjustment Factor

Based on Table 1.1 above, an annual adjustment factor of 10.35% can be applied to the total tariff basket. The adjustment in each tariff will be weighted, thus the adjustment across rates will be dependent on their relative weights in relation to the total tariff basket. The tariff basket, shown in Table 1.2 below, is derived using the 2012 billing determinants and the approved non-fuel tariffs arising out of the OUR's June 1, 2012 Determination Notice (see Table 1.4 for those approved 2012-13 tariffs).

Table 1.2

Total Non-Fuel Tariff Basket

		Rate Option	12 Months 2012 Customer Revenue	Energy Revenue	Demand (KVA) revenue				Total Demand Revenue	Total Revenue
					Std.	Off-Peak	Part Peak	On-Peak		
			JA$ '000	JA$ '000	JA$ '000	JA$ '000	JA$ '000	JA$ '000	JA$ '000	JA$ '000
Rate 10	LV	<100	809,863	728,392						1,538,256
Rate 10	LV	>100	1,217,982	13,219,706						14,437,687
Rate 20	LV		493,378	6,345,460						6,838,838
Rate 20	WT		26,802	1,112,763						1,139,565
Rate 40	LV - Std		72,384	1,667,299	2,976,158				2,976,158	4,715,842
Rate 40	LV - TOU		3,220	86,653	67,755	19,936	196,379	198,515	482,585	572,458
Rate 40	WT - TOU		30,279	1,071,219		1,121	12,448	15,756	29,324	1,130,822
Rate 50	MV - Std		5,635	449,535	957,135				957,135	1,412,304
Rate 50	MV - TOU		1,053	85,195	68,719	31,476	299,509	317,368	717,072	803,320
Rate 50	WT - TOU		2,539	1,219,201		986	8,823	11,293	21,103	1,242,843
Rate 60	LV		5,875	1,031,986						1,037,861
TOTAL			2,669,009	27,017,410	4,069,767	53,519	517,159	542,932	5,183,377	34,869,796

1.3 Application of the Annual Inflation Adjustment Factor (Cont'd)

The weights of each tariff, relative to the total tariff basket shown in Table 1.2, are shown in Table 1.3 below.

Table 1.3

Non-Fuel Tariff Basket Weights

Class		Rate Option	Customer Charge	Energy-J$/kWh	Demand-J$/KVA				Total
					Std.	Off-Peak	Part Peak	On-Peak	
Rate 10	LV	<100	2.32%	2.09%	0.00%	0.00%	0.00%	0.00%	4.41%
Rate 10	LV	>100	3.49%	37.91%	0.00%	0.00%	0.00%	0.00%	41.40%
Rate 20	LV		1.41%	18.20%	0.00%	0.00%	0.00%	0.00%	19.61%
Rate 20	WT		0.08%	3.19%	0.00%	0.00%	0.00%	0.00%	3.27%
Rate 40	LV - Std		0.21%	4.78%	8.54%	0.00%	0.00%	0.00%	13.53%
Rate 40	LV - TOU		0.01%	0.25%	0.19%	0.06%	0.56%	0.57%	1.64%
Rate 40	WT - TOU		0.09%	3.07%	0.00%	0.00%	0.04%	0.05%	3.25%
Rate 50	MV - Std		0.02%	1.29%	2.74%	0.00%	0.00%	0.00%	4.05%
Rate 50	MV - TOU		0.00%	0.24%	0.20%	0.09%	0.86%	0.91%	2.30%
Rate 50	WT - TOU		0.01%	3.50%	0.00%	0.00%	0.03%	0.03%	3.57%
Rate 60	LV		0.02%	2.96%	0.00%	0.00%	0.00%	0.00%	2.98%
TOTAL			7.66%	77.48%	11.67%	0.15%	1.49%	1.56%	100.0%

The non-fuel base rates approved in the 2012 Tariff Determination Notice which were used to derive the 2012 non-fuel tariff basket are shown in Table 1.4 below.

Table 1.4

OUR approved Non-Fuel Tariffs for 2012-3

Class		Rate Option	Customer Charge	Energy-J$/kWh	Demand-J$/KVA			
					Std.	Off-Peak	Part Peak	On-Peak
Current Rates								
Rate 10	LV	--100	322.5	6.35				
Rate 10	LV	> 100	322.5	14.52				
Rate 20	LV		709.5	12.42				
Rate 40	LV - Std		5,160.0	3.54	1,332.84			
Rate 40	LV - TOU		5,160.0	3.54		56.57	586.45	750.41
Rate 50	MV - Std		5,160.0	3.36	1,199.56			
Rate 50	MV - TOU		5,160.0	3.36		53.31	519.81	666.42
Rate 60	LV		1,935.0	14.73				

The rates shown above are reproduced from Table 5.5 "Approved Non-Fuel Tariffs for 2012-13" in the OUR's Determination Notice – Jamaica Public Service Company Limited, Annual Tariff Adjustment 2012, Document No. Ele 2012002_Det 001. These non-fuel base rates were determined at a Base Exchange rate of J$87.5: US$1.

1.3 Application of the Annual Inflation Adjustment Factor (Cont'd)

Table 1.5 below shows how JPS proposes to apply the annual price adjustment factor of 10.35% to the individual non-fuel tariffs, with some level of tariff rebalancing between the rate types.

Table 1.5

Proposed Annual Non-Fuel Price Adjustment per tariff

Class		Block/ Rate Option	Customer Charge	Energy -J$/kWh	Demand-J$/KVA			
					Std.	Off-Peak	Part Peak	On-Peak
Rate 10	LV	--100	20.000%	13.725%				
Rate 10	LV	> 100	20.000%	13.725%				
Rate 20	LV		20.000%	13.750%				
Rate 20	WT		20.000%	-20.000%				
Rate 40	LV - Std		20.000%	13.750%	15.000%			
Rate 40	LV - TOU		20.000%	13.750%	15.000%	15.000%	15.000%	15.000%
Rate 40	WT - TOU		20.000%	-25.000%		15.000%	15.000%	15.000%
Rate 50	MV - Std		20.000%	13.750%	15.000%			
Rate 50	MV - TOU		20.000%	13.750%	15.000%	15.000%	15.000%	15.000%
Rate 50	WT - TOU		20.000%	-25.000%		15.000%	15.000%	15.000%
Rate 60	LV		20.000%	0.000%				

In accordance with the Licence, the weighted annual adjustment factor proposed by JPS should equate to the annual adjustment factor of 10.35%. Proof of this is shown in table 1.6 below.

Table 1.6

Weighted Non-Fuel Inflation Adjustment

Class		Block / Rate Option	Customer Charge	Energy -J$/kWh	Demand-J$/KVA				
					Std.	Off-Peak	Part Peak	On-Peak	
Weighted increase									TOTAL
Rate 10	LV	--100	0.46%	0.29%	0.00%	0.00%	0.00%	0.00%	0.75%
Rate 10	LV	> 100	0.70%	5.20%	0.00%	0.00%	0.00%	0.00%	5.90%
Rate 20	LV		0.282%	2.50%	0.00%	0.00%	0.00%	0.00%	2.78%
Rate 20	WT		0.016%	-0.64%	0.00%	0.00%	0.00%	0.00%	-0.62%
Rate 40	LV - Std		0.04%	0.66%	1.28%	0.00%	0.00%	0.00%	1.98%
Rate 40	LV - TOU		0.00%	0.03%	0.03%	0.01%	0.08%	0.09%	0.24%
Rate 40	WT - TOU		0.02%	-0.77%	0.00%	0.00%	0.01%	0.01%	-0.73%
Rate 50	MV - Std		0.00%	0.18%	0.41%	0.00%	0.00%	0.00%	0.59%
Rate 50	MV - TOU		0.00%	0.03%	0.03%	0.01%	0.13%	0.14%	0.34%
Rate 50	WT - TOU		0.00%	-0.88%	0.00%	0.00%	0.00%	0.00%	-0.88%
Rate 60	LV		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
TOTAL			1.52%	6.60%	1.75%	0.02%	0.22%	0.24%	10.35%

1.3 Application of the Annual Inflation Adjustment Factor (Cont'd)

Proposed Introduction of Wholesale Tariffs

Please note that the annual tariff adjustment includes the proposed introduction of a new Wholesale Tariff (WT) class for qualifying rate 20, 40 and 50 customers. We believe this can be accommodated as part of the annual tariff rebalancing exercise provided the total tariff increase does not exceed the global price cap of 10.35% and this new customer class is clearly defined.

Table 1.5 shows the proposed reduction in the tariffs for such qualifying WT customers, while Table 1.6 shows their total weighting in the overall 10.35% increase in the tariff basket. Please note (from Table 1.6) that they collectively represent a 2.23% decrease out of the overall 10.35% annual increase that is required.

It is our analysis that a volume discount is required to the tariffs for the largest users of energy and demand on the network. This is consistent with the lower tariffs for rate 40 and 50 customers relative to rate 20 customers. However, the rate 40 category starts at 25 KVA and does not provide any further volume discount for customers with demand which is 40 times larger (i.e. 1 MVA). The introduction of the Wholesale Tariff seeks to address this deficiency for customers with demand exceeding 1 MVA.

We analysed the complete set of billing determinants for 2012 for each of our customers who met the following criteria:

4. Single point electricity supply with an average monthly demand of at least 1 MVA during 2012 and total annual energy usage of at least 5,000,000 kWh;
5. Multiple points of electricity supply with an average monthly demand of at least 3 MVA during 2012 and total annual energy usage of at least 10,000,000 kWh;
6. For rate 20 customers (with no demand meter), total energy usage of at least 10,000,000 kWh during 2012. Additionally, customers who meet the criterion in item 2 above would also have their rate 20 supply qualifying for the Wholesale Tariff as well.

The qualifying list of customers meeting the above criteria (who represent approximately 18% of total sales) will be supplied to the OUR under confidential cover.

We are confident that this kind of tariff rebalancing is to the overall benefit of all the network users. It provides an incentive for these customers with the potential to self-generate to remain on the grid thereby keeping downward pressure on per unit cost for all other customers using the network. It is also critical to spurring economic development in Jamaica at this time and to ensuring growth in these critical businesses that use a substantial amount of energy. These qualifying WT customers **(as shown in a typical bill provided in Appendix II)** have a monthly electricity bill that is typically $29 million per month (at the lowest level for rate 20), which is substantially larger than the typical rate 20 customer (who has a $75,000 per month bill) or a rate 10 customer ($6,300 per month bill). The larger WT customers will have monthly electricity bills ranging from $50 - $400 million per month.

We are also motivated by the fact that the failure to introduce a Wholesale Tariff will result in some of these customers leaving the grid (or possibly going out of business) which will

1.3 Application of the Annual Inflation Adjustment Factor (Cont'd)

necessarily increase the cost of electricity for all remaining customers on the grid and further hurt the economic development of the country.

We recommend that new entrants be added to this customer class only once per year as part of the annual tariff submission, based on their past 12-month consumption record and subject to regulatory approval.

Table 1.7 below shows the proposed rates for 2013/14 after resetting the Base Exchange rate and after application of the proposed non-fuel price adjustments shown in Table 1.5, including the introduction of the new wholesale tariffs.

Table 1.7

Summary of Proposed 2013/14 Non-Fuel Tariffs

Class		Block/ Rate Option	Customer Charge	Energy -J$/kWh	Demand-J$/KVA			
					Std.	Off-Peak	Part Peak	On-Peak
Rate 10	LV	--100	387.00	7.22				
Rate 10	LV	> 100	387.00	16.51				
Rate 20	LV		851.40	14.13				
Rate 20	WT		851.40	9.94				
Rate 40	LV - Std		6,192.0	4.03	1,532.77			
Rate 40	LV - TOU		6,192.0	4.03	1,532.77	65.06	674.42	862.97
Rate 40	WT - TOU		6,192.0	2.66		65.06	674.42	862.97
Rate 50	MV - Std		6,192.0	3.82	1,379.49			
Rate 50	MV - TOU		6,192.0	3.82	1,379.49	61.31	597.78	766.38
Rate 50	WT - TOU		6,192.0	2.52		61.31	597.78	766.38
Rate 60	LV		2,322.0	14.73				

The overall 10.35% nominal increase in the non-fuel tariffs includes the impact of the resetting of the Base Exchange Rate from J$87.5:US$1 to J$98.5:US$1. The increase attributable to the resetting of the Base Exchange Rate is already reflected in customer bills through the foreign exchange adjustment clause. Accordingly, the real impact of the annual price adjustment factor is an average increase of 0.8% in the non-fuel tariffs.

Please note that a detailed analysis of the non-fuel tariff adjustment for 2013/14 and the total bill impact for the typical JPS customer in each rate class has been provided in **Appendix II.** This demonstrates that the total bill impact for the typical JPS residential customer will result in an increase of 0.26%. Additionally, it shows that for commercial customers there will be a range of adjustments from a decrease of 7.49% for a wholesale customer to an increase of 2.78% for a small commercial customer.

1.3 Application of the Annual Inflation Adjustment Factor (Cont'd)

Section 1.4 that follows discusses some additional requested changes as part of the annual tariff adjustment application. This includes the introduction of a $250 early payment incentive / late payment fee for residential customers and the changing of the fuel weights for the calculation of the fuel tariffs for rate 40 and 50 customers. The price reductions noted above are after taking into consideration the additional adjustments proposed in Section 1.4.

1.4 Other annual tariff adjustments

Early Payment Incentive/ Late Payment fee

JPS proposes the introduction of an early payment incentive/late payment fee of $250 for residential customers only.

Residential customers who pay their bills in full and on time will receive the early payment incentive. This will be applied to their bills in the following month. Those customers who pay their bill after the due date will be charged the late payment fee, also to be applied to their bill in the following month. This creates a $500 incentive to pay on time. This is an important initiative given that JPS does not charge residential customers interest for normal arrears and it typically has arrears exceeding $1 billion in total for residential customers.

We believe this will help to positively reduce total receivables thus reducing the amount that is included in the rate base, which tends to have an upward pressure on tariffs. It also allocates a direct charge to customers who are tardy.

This will also provide a more customer friendly way to dealing with late payments rather than having the threat of disconnection as the only option. In this regard, we therefore propose a 7 day grace period for customers who are late with their bill payments before resorting to disconnections.

Further, we propose providing up to 15 days grace before resorting to disconnections for residential customers who have an adequate security deposit in place (i.e. equal to one month's electricity consumption). Consideration will be given to customers with an excellent past payment record at the Company's discretion.

Bill Payment Notification & Payment Channels

These proposals are made in the context of the significant improvement in customer awareness and notification of their billing cycle and the vast expansion in payment channels now available to customers for timely and convenient settlement of their invoices.

Over the last two years we have regularised customer billing periods so customers are now accustomed to a consistent and known due date. Additionally, we now have a database of telephone numbers or email addresses for 60% and growing, of our customers and utilise a text alert system to remind customers to pay their bill by the due date. There is a programme to continually capture this customer contact information at points of communication through

1.4 Other annual tariff adjustments Cont'd

our Customer Care Centre or office visits. We have also re-launched our website to facilitate on-line bill payments and bill query, so customers can easily check their bill balance and due date.

We wish to emphasise that beyond the late payment fee a customer who anticipates a difficulty making a payment on schedule and in full can enter into a payment arrangement through the Customer Care Centre, or at a parish office, to avoid disconnection. This arrangement should be made prior to the due date to avoid a disconnection being automatically triggered.

Under this facility two payment arrangements are permitted per calendar year, whereby the balance is paid in full within 30 days of the due date. This requirement is important to ensure that receivables are kept to manageable levels, especially giving consideration to the fact that fuel and the IPP payments represent approximately 80% of the total cost of electricity and JPS must settle its obligations with these respective suppliers within 30 days. Failure to do so necessarily results in interest charges being levied on JPS and undue foreign exchange risk given these obligations must be settled in U.S. currency.

Increase in the Standard Disconnection Fee

We hereby request a 10% increase to the disconnection fee, from $1,500 to $1,650 (plus GCT). This request is made given that no increase has been granted to the disconnection fee since 2009. Please note that by contrast the cumulative Jamaican inflation adjustment for the last 3 annual tariff applications (2010 to 2013) has amounted to approximately 23%. By way of reference only, we also wish to note that this fee is approximately half of the fee currently approved by the OUR for the water utility for the disconnection of service.

Illegal Reconnection Fee

Additionally, for offending customers, who have not paid their outstanding balance within 30 days of the due date and whom JPS has found illegally reconnected, we propose the introduction of a second fee of $2,000 for an illegal reconnection. This is necessary for such offending customers, as JPS often has to resort to removing the entire service wire to prevent such customers from illegally reconnecting themselves. This charge which is higher than and is in addition to the standard disconnection/reconnection fee is necessary to reflect the higher cost of doing this additional activity and to send strong price signals that curb such customer tendencies that adds to commercial losses to the grid.

Adjustment to the Fuel Weights

As you are aware, all customers currently pay the same standard fuel rate except for TOU customers who pay adjusted rates based on their actual time of use. The adjusted fuel weights for the three buckets of energy use (off-peak, partial-peak and on-peak) are 0.869, 1.044 and 1.302, respectively. An amount greater than 1 implies a premium is being charged while an amount less than 1 implies a discount is being given.

1.4 Other annual tariff adjustments (Cont'd)

JPS proposes two changes to the fuel weights with a view to giving a volume discount for the largest users of electricity (and thus fuel) on the grid, as well as to incentivise more production in the off-peak time band.

Firstly, we propose amending the off-peak weight from 0.869 to 0.800. We believe this is reasonable given the TOU customer would be receiving a 20% discount (up from 13.1% previously) for his off-peak usage, while still paying a 30% premium for his on-peak usage and a 4.4% premium for his partial-peak use. This will provide a greater incentive to moving production into the off-peak time band which will in turn result in a lower overall system peak demand and lower fuel costs on average for all customers.

Secondly, we propose amending the standard fuel rate from 1 to 0.96 for all rate 40 and 50 customers (including the wholesale customers). We believe this 4% discount is reasonable given that the consumption of these customer classes is typically several hundred times larger than a typical residential customer and given the fuel component represents up to 80% of their total bill, compared to 66% for a typical residential customer **(please see examples of typical bills in Appendix II**). Again this is intended to provide some level of price reduction for the largest users on the grid and to support economic growth and development for the country. The proposed fuel weights are shown in **Appendix V.**

Section 2: Overview of Existing Fuel Efficiency Targets

2.1. Introduction

Currently, the recovery of fuel cost is subject to two efficiency measures: Heat Rate and System Losses. If the Company fails to achieve the stipulated regulatory efficiency targets it will experience an under-recovery of its fuel cost (i.e. a fuel penalty) and if it exceeds the targets it can have a fuel gain. There is an increasing trend in the net fuel penalty over the last 3 years, growing from US$13 million in 2010 to US$36.5 million in 2012, with the Company experiencing a net fuel penalty in every month since the losses target was reduced to 17.5% in July 2011 (excluding November 2012 when force majeure relief was provided due to the impact of hurricane Sandy).

It should be evident from the table above that the regulatory targets for system losses and heat rate are completely out of sync with the actual performance of the utility.

It should also be evident that this level of fuel penalty is clearly not sustainable, nor is it acting as a true incentive for improved efficiency. In fact, this level of fuel penalty will simply precipitate the failure of JPS, a point which is now being underscored for the 3rd time in a row as part of the annual tariff adjustment submissions supported by the utility's increasingly poorer financial results and the on-going financial covenant breaches.

To be abundantly clear, if the current framework is not changed, JPS will experience a net fuel penalty exceeding US$30 million again in 2013 which would guarantee its failure as a going concern.

New Approach Needed on Losses

It is impossible for JPS to substantially reduce system losses from the current levels of 25% in the near future and without a complete redesign in the approach to addressing this crime. We have included the details of our activities conducted during 2012 in **Appendix III,** which represents our best efforts to reduce the theft of electricity and our plans for 2013. In section 2.3, we detail the challenges being experienced in this area and the recommendations for a redesign to the approach to dealing with the 'root cause' of the problem, which will require the concerted effort of several government agencies working in conjunction with JPS. This criminal activity must become a top priority for all of the relevant authorities, including the police, the judiciary and the GOJ, if we are to have a sustainable programme designed to truly eradicate the theft of electricity. JPS will never be able to deal with this problem on its own.

2.2. Heat Rate target

The objective of a good regulatory environment should be to provide the utility with incentives to improve the relative efficiency of converting chemical energy to electrical energy; and to ensure the economic dispatch of all available generation units. In addition to the above, the OUR has stated that:

"…. the following principles should be applied in setting the heat rate target:

- *The target should hold JPS accountable for the factors which are under its direct control;*
- *The target should adequately and realistically reflect the available and future (within the rate-cap period) generating fleet's capabilities and legitimate constraints."*

Currently, there exists a good regulatory framework around the economical dispatch of generation units, however, JPS believes the only way to significantly reduce the heat rate for the benefit of our customers will come from replacing old and inefficient generating plant. In this regard, the OUR has informed JPS that it does not have the right to replace its existing generation assets and instead we have spent the last three (3) to five (5) years waiting on a clear signal from the OUR and GOJ that allows for new generation to be introduced to the benefit all of Jamaicans. There is clearly a need to act now in this regard, as all new generation plant will be 40 to 50% more efficient in terms of heat rate than the current generation assets that need to be retired.

JPS also notes for the record its concern about the reliability of the existing generation plants amounting to approximately 292 MWs of capacity, that were expected to be retired in 2014. There can be no assurance that these plants will continue to be available for the near future. In any event to keep them running will cost significant amounts in capital expenditure and maintenance costs. In 2013 alone more than US$12 million will be spent on these units, despite the clear need to retire them in the near future. However, at this point in time, there is very little which can be done to improve the efficiency of these base-load units as they are simply economically obsolete and inefficient by design.

As a result of the substantial uncertainty with regards to their reliability and availability, and given how volatile the system-wide heat rate performance will be until new generation

expansion is added, we believe it is appropriate to suspend the heat rate target at this time, in conjunction with our request for full pass-through of fuel costs.

Focus should be maintained on the economic dispatch of units to ensure the cost of fuel is kept as low as possible. We believe there is no conflict in this regard, as JPS is incentivised to keep the cost as low as possible bearing in mind the negative impact which high prices have on our customers and thus on their ability to consume the services we are providing.

By way of reminder all future generation expansion projects will be implemented under an IPP model with the IPPs being held to a contractual heat rate. All such IPPs will be third party providers of electricity to JPS and, as such, it will not be appropriate for JPS to be penalised as it relates to their heat rate performance. Already today, more than 33% of all net generation is provided by IPPs and will only increase substantially in the near future as new generation is added to the grid.

2.3. System Losses Target

It is important to understand that JPS is penalized for not meeting the system losses target in several ways. Additionally, it is important to understand that there are several causes for system losses, some which are outside of the control of the utility. Thirdly, in any fair regulatory environment, the target should hold the utility accountable for things which are under its control (as stated above for heat rate). Lastly, the target should be realistic if it is to truly act as an incentive. This means it must bear some semblance to what is actually achievable and properly count the costs required to achieve the target (i.e. cost benefit analysis). These main principles are expanded on below.

The Three Ways the Company is Penalized for System Losses

1. The Company is penalized in its non-fuel revenues as a result of the OUR adjusting the actual energy sales used to set the non-fuel tariffs in the first place. The actual energy sales were adjusted for assumed sales growth (in relation to expected additional sales from converting some electricity theft into actual sales), which never actually materialized. That is to say, the electricity rates were not derived based on the approved costs (i.e. the revenue requirement) divided by **actual energy sales** but rather based on the approved costs divided by an **adjusted energy sale**. The actual test year energy sales were 3,197.7 GWh in 2008 but 3,256 GWh (which includes the sales growth assumption) was used to calculate the non-fuel tariffs. This creates a regulatory stretch target for reducing losses which results in a US$6.4 million annual penalty to the extent the adjusted energy sales did not materialise.

2. To the extent that sales are actually shrinking (the more realistic projection since the 2009 rate case submission as a result of the global recession), even if losses remained the same as a percentage of sales (something which is actually unlikely), then the abovementioned US$6.4 million penalty would be increasing. This is a function of the high fixed cost nature of non-fuel costs (where more than 70% of costs do not vary with changing levels of production) and the fact that the tariffs are not truly cost-reflective in this regard (only 21% of non-fuel tariffs are fixed in

nature). Since, it is the OUR that sets the tariffs, JPS cannot actually resolve this fundamental problem on its own. The comparable level of energy sales to the 2009 determined tariffs was 3,015.8 GWh in 2012. All other things being equal, this means the losses penalty on non-fuel tariffs would have grown to more than US$20 million per annum by 2012. This is further exacerbated by the fact that the utility is expected to become 2.72% more efficient in 2013 (X-factor adjustment) despite the expected shrinkage in sales; the high fixed cost nature of the business and poor match with fixed-cost recovery in the form of the tariffs and its inability to replace old ageing generation plant.

3. The losses penalty as it relates to the actual recovery of fuel costs. This penalty again increases as sales shrink, given that losses are calculated as a percentage of sales, and also increases as the price of oil increases. Since fuel is the straight variable cost of production and represents 65% of the total cost of energy, we believe that the full pass through is essential to ensure the viability of the utility. This is extremely important in the context that in a typical year, the return (profit) of the utility is not likely to be more than 2 - 3% of the total cost of electricity.

In the case of 2012, the fuel penalty actually represented 4% of the cost of fuel, thereby virtually eliminating all of the operating profit of the utility in 2012.

Additionally, as demonstrated in the points that follow, we believe the losses target is more appropriate as it relates to the non-fuel costs.

Technical Losses

The reasons for system losses will obviously vary depending on whether we are discussing technical or non-technical losses.

In the case of technical losses, we believe an independent study is critical to confirming the existing level of technical losses (to the satisfaction of the regulator) which we evaluate to be approximately 10%. Additionally, this study would help to design a credible agreed programme to achieve an optimal level of technical losses. The T&D system configuration and voltage levels are critical to determining the actual level of technical losses. Further reduction in technical losses will typically be as a result of capital intensive programmes such as building more sub-stations or increasing the voltage level at which we transmit and distribute electricity. As a result of the capital demand, a proper engineering study must be conducted in order to determine the appropriate reconfiguration cost and expected benefits. Additionally, such a study could identify any other corrective measures which could be taken to improve technical losses. This would form the basis for a credible work program which the regulator could then use as a basis for setting regulatory targets for desired levels of technical losses, while also giving consideration to the required funding to achieve the said targets. This process does not require the presence of a fuel penalty to be effective and is typically driven by non-fuel costs at any rate. As mentioned previously, this loss target could be incorporated into a stretch sales target for the purposes of determining the non-fuel tariffs.

Independent Third Party Evaluation

On the instruction of the OUR, we engaged an international firm of consultants (KEMA) to conduct the above engineering study and expect to submit the results of this study to the OUR by April 15, 2013 to help guide the process of establishing a credible technical loss reduction campaign. Thereafter, the OUR could indicate a clear path going forward for achieving a reasonable regulatory target in relation to technical losses. This could be embedded in a five year business plan which could be implemented as part of the 2014 – 19 tariff application process. We believe this is most appropriate given the substantial resources that would likely be involved and the long planning horizon for reconfiguration of a T&D network which also needs to be synchronized with future generation expansion plans.

Additionally, given the current level of actual energy sales relative to the regulatory target, we believe the US$20 million per annum penalty mentioned previously is a substantial incentive for JPS to continue reducing losses in the near future. However, we believe there will likely be the need for a greater provision for capital expenditure in the tariffs to accomplish this feat but the engineering study will objectively confirm the best way forward.

Non-Technical Losses

Non-technical losses are represented primarily by the theft of electricity. This may take numerous forms including meter tampering, meter by-pass and the direct theft of service by illegal consumers. **Appendix III** details the numerous strategies and activities that JPS is undertaking in its efforts to reduce non-technical losses. However, the reality of the situation is despite the growing fuel penalty being experienced by JPS (as shown previously in Table 2.1), JPS has not been able to prevent the rising trend in losses over the last decade and sharply accelerated over the last two years, despite its best efforts. The simple reason for this is that the theft of electricity is a crime which JPS alone cannot prevent, any more than the police force by itself can reduce crime in Jamaica. To resolve this particular act of crime in Jamaica will require the concerted efforts of several government agencies including the Police, PIOJ, REP, PATH, NWC, working in conjunction with the JPS. It will also need the collective will and commitment of the GOJ demonstrated through strong legislative and regulatory support to ensure more severe penalties for offenders and a swifter path to justice.

Undoubtedly, this will require changes to legislation much in the same way changes are being made to deal with the 'lottery scam.' Today, the theft of electricity is costing the country approximately US$60 million per annum in wasted fuel, another US$20 million in foregone revenues for the utility and an annual budgetary expenditure of approximately US$30 million to try to prevent/reduce this criminal act.

Social Intervention

JPS alone cannot get to the 'root cause' of the problem and admittedly is not able to do the necessary social intervention work required, or to enforce the law. It is obvious that one of the visible current approach of pulling down illegal connections is simply not effective in

terms of reducing the theft of electricity as the benefits are quite short lived. Additionally, it is also clear that our attempts to regularise communities through the implementation of RAMI, requires a much more collective effort and is a longer term solution and is itself dependent on social intervention if it is truly to be effective.
As provided in greater detail in our separate paper entitled "*A new way forward for Losses*" we make the point that if we were to join forces with the relevant government authorities under the direction of the PIOJ, and by including the NWC into this programme, a pool of US$25 million per annum from existing funds between the two utilities could be available, subject to regulatory approval, to implement a more holistic approach to regularising the estimated 150,000 households which exist in informal settlements across Jamaica. This programme would have elements of incentive as well as enforcement, inducement and empowerment but supported by strong deterrents and sanctions. We believe this is the only true way to reduce the theft of utility services (electricity and water) in Jamaica and to create a culture where persons appreciate the need to pay for their basic utilities.

In summary, this programme would be funded to ensure a systematic approach is taken to regularising impoverished communities all across the country, where one of their main constraints is a lack of basic infrastructure. There is also clearly a need for a structured social intervention programme to provide skills and jobs training, customer education and financial assistance to help persons to be able to afford the utility services in the short term.

Community Renewal & Culture Change

There is also the need for community renewal work to be conducted aimed at improving basic infrastructure in such communities. There is also proposed a need to increase the policing and law enforcement in these communities to ensure that persons provided with the opportunity and assistance to regularise themselves, are also held accountable for upholding the law. In this regard, we also recommend legislative changes to the law to facilitate the introduction of a special court to prosecute utility offenders. We believe a credible programme funded jointly by the NWC and JPS would all these factors and look forward to the speedy implementation with the assistance of the OUR and PIOJ.

Indeed, the only way we are truly going to reduce the level of crime in Jamaica, including the theft of electricity and water, is by providing the basic infrastructure and education and by changing the culture of our people. The theft of electricity is a crime and one which costs the country dearly. As such, we believe a special purpose programme must be started immediately which gives critical attention to addressing this problem to ensure the sustainability of the utility sector.

Full Fuel Cost Pass-through

The pass-through of fuel costs is a fundamental condition for the survival of the electricity sector that does not jeopardise accountability or creates moral hazard as appropriate incentives already exist in the form of the non-fuel penalties. We also believe this is an area which requires additional study in order to design a programme that serves the best interest of all. As such, we will be working closely with the OUR and the PIOJ to design and implement such a programme in the shortest possible time.

In the meantime, we implore the OUR to allow the full pass-through of fuel costs as of the effective billing date of the Annual Adjustment Determination, July 1, 2013.

The analysis shows that this would create upward pressure of approximately 4% on fuel costs in general with a marginal increase in the average residential customer's bill of less than 0.5% or $16 per month as part of the annual tariff adjustment submission taking into consideration all other adjustments and recommendations made **(please refer to Appendix II for details of the bill impact from the annual tariff application).**

Without by any means trivialising or down playing the impact of any increase at all on our customers, JPS suggests that customers stand to benefit substantially over the medium term through a vibrant and viable JPS that can support generation expansion to significantly lower cost and invest in the T&D network to improve service and reliability.

The successful implementation of a sustainable loss reduction program, aimed at regularising 10,000 – 15,000 households per annum, will ultimately also result in a substantial reduction in the cost of electricity for all. Admittedly, this will take some time to regularise the 150,000 illegal users of electricity and water today., However, it is clear that a structured programme of social intervention involving the GOJ that assist in infrastructure build-out, income generation and a targeted, time bound and means-based assistance programme backed by strong policing and effective laws stand a far better chance of success than the current Lone Ranger approach thrust upon JPS.

Section 3: Ensuring Quality of Service: The Q-Factor

3.1 Introduction

The third element under the PBRM is the Q-factor, i.e., the allowed price adjustment to reflect changes in the quality of service provided to customers. Specifically:

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

In its 2009 Tariff Review Determination, the OUR reiterated that for the second regulatory period (2009-14) the Q-factor should be based on three quality indices:

- System Average Interruption Frequency Index (SAIFI) — this index is designed to measure the average frequency of sustained interruptions per customer over a predefined area.

$$SAIFI = \frac{\text{Total number of customer interruptions}}{\text{Total number of customers served}}$$

(Expressed in number of interruptions (Duration >5 minutes) per year)

- System Average Interruption Duration Index (SAIDI) — this index is referred to as customer minutes of interruption and is designed to measure the average duration of sustained interruption that customers experience.

$$SAIDI = \frac{(\Sigma \text{ Customer interruption durations})}{\text{Total number of customers served}}$$

(Expressed in minutes)

- Customer Average Interruption Duration Index (CAIDI) — this index represents the average time required to restore service to the average customer per sustained interruption. It is the result of dividing the duration of the average customer's sustained outages (SAIDI) by the frequency of outages for that average customer (SAIFI).

$$CAIDI = \frac{(\Sigma \text{ Customer interruption durations})}{\text{Total number of interruptions}} \text{ or } \frac{SAIDI}{SAIFI}$$

(Expressed in minutes per interruption *(Duration >5 minutes)*)

The OUR also signalled its intent to introduce a fourth index, the Momentary Average Interruption Frequency Index (MAIFI) – this index measures the average frequency of momentary interruptions per customer over a predefined area. Momentary interruptions are interruptions with duration less than or equal to 5 minutes.

$$MAIFI = \frac{\text{Total number of customer interruptions}}{\text{Total number of customers served}}$$

(Expressed in number of interruptions (Duration ≤ 5 minutes) per year)

Q-Factor Principles

JPS and the OUR have agreed in principle that the Q-factor should meet the following criteria:

- The Q-factor should provide the proper financial incentive to encourage JPS to continually improve service quality. It is important that random variations should not be the source of reward or punishment;
- The measurement and calculation of the Q-factor should be accurate and transparent without undue cost of compliance;
- It should provide fair treatment for factors affecting performance that are outside of JPS's control, such as those due to disruptions by the independent power producers; natural disasters; and other *Force Majeure* events, as defined under the licence; and
- It should be symmetrical in application, as stipulated in the License.

3.2. Baseline Setting for SAIDI, SAIFI and CAIDI

In reviewing the performance of the reliability indices over the past five years the OUR has identified that certain short-comings due to the quality and consistency of customer outage and restoration data at the sub-feeder level, may negatively affect the ability of the reliability indices to accurately measure service quality improvements.

As a result, the OUR engaged consultants DNV KEMA to conduct a review of the measurement and calculation of the reliability indices to inform the target-setting process. The consultants' report was shared with JPS on January 07, 2013 along with a Reliability Manual.

JPS and the OUR are to discuss the findings of the audit and the associated recommendations in order to complete a scope of work that would allow for the setting of the baseline and Q-Factor targets at the time of the 2014-19 rate reset at March 2014.

Accordingly JPS recommends that the Q-Factor be set at 0% for the 2013-14 periods. This would be consistent with the KEMA recommendations in regards to the current data upon which the indices rely.

3.3. JPS System Reliability Improvement Programme

KEMA found that there are several initiatives underway within JPS that will have a sharp and demonstrable improvement in the collection of reliability data as well as the calculation of the Q-Factor.

For 2012 JPS increased its focus on a technology platform for the improvement in the data collection, management and reporting of reliability indicators along with the rehabilitation and reinforcement of the transmission and distribution network. Along with the programme of works planned for 2013, which will be finalised with the OUR in the context of the KEMA

study, investment in reliability improvement over the three (3) years 2010 to 2012 totals US 32.32 Million. Details of the investment programme are shown in Table 3.1

Table 3.1: Investment in Reliability Improvement

T&D System	Project Cost (US$M)		
Description	**2010**	**2011**	**2012**
Structural Integrity (Replacement of poles)	4.50	5.00	5.80
Substation Line in Line out	1.50	1.50	0.66
Pole Mounted Reclosers	0.20	0.25	0.25
Targeted Feeders Distribution Reliability Improvement	1.00	2.00	1.54
Pole-mounted Transformer Replacement	2.83	1.80	2.50
Vegetation Management-Application of Technology (Covered Conductors)	-	0.05	0.15
Tools and other regional activities (line relocation for safety and access)	-	0.500	0.28
Total	**10.04**	**11.10**	**11.18**

An important dimension to the programme is the more intensive use of technology on the physical network to identify and correct areas of reliability weakness. JPS is currently deploying state of the art techniques such as:

- Ultrasonic Leakage Current Detector (Inspector101)
- Infra-red Scanner
- Pole-mounted Reclosers
- Insulated MV conductor covers
- Insulated MV covered conductors
- Fuse Coordination software
- Application of Faulted Circuit Indicators

These technologies coupled with the introduction of an Outage Management System (OMS) that, along with the GIS database will automate the data collection, management and reporting process related to outages, will result in a manifold improvement in the quality of inputs that determine the Q Factor. This is one of the key conclusions of KEMA with which JPS concurs fully.

At the time of the KEMA audit the OMS was scheduled to be implemented for Q3 2012. There has however been a marked slippage in this schedule which will be explained along with a description of the system and the current implementation timetable. **(See Appendix IV).**

MAIFI

JPS continues to believe that the introduction of MAIFI is premature to this market. Nevertheless the monitoring and measurement of MAIFI began in 2011. The measured value of MAIFI for 2011 is 109 and for 2012 it is 112.

The Company has taken note of KEMA's comments on MAIFI and will engage the OUR on the appropriate treatment for this index at the time of the setting of the baseline for the reliability indices.

3.4. Past 5 Years Performance on SAIDI, SAIFI and CAIDI

Table 3.2 below outlines JPS performance for the past 5 years in the three main qualities of service measures: SAIDI, SAIFI and CAIDI. The data shown here is for 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. All the computations are based on the respective years' customer base. This data was compiled using the current methodology with due respect to the observation and recommendations of KEMA of the possible weaknesses in the data collection process.

Table 3.2.1: JPS 2008-2012 performance on SAIDI

	SAIDI					
				2011 Customer Count		
	2008	2009	2010	*Fuse size	Actual	2012
T&D	2308	1925	1945	1390	1315	1713
Generation	198	343	631	316	316	242
System Total	2506	2268	2577	1706	1631	1955
Annual % Reduction	15%	9%	-14%	34%		-20%
Average Annual % Reduction	5%					

Table 3.2.2: JPS 2008-2012 performance on SAIFI

	SAIFI					
				2011 Customer Count		
	2008	2009	2010	*Fuse size	Actual	2012
T&D	16.85	14.41	14.00	11.24	10.67	12.75
Generation	7.49	11.81	15.10	10.76	10.76	8.55
System Total	24.34	26.22	29.10	22.00	21.43	21.30
Annual % Reduction	-3%	-8%	-11%	24%		0.6%
Average Annual % Reduction	0.5%					

Past 5 Years Performance on SAIDI, SAIFI and CAIDI (cont'd)

Table 3.2.3: JPS 2008-2012 performance on CAIDI

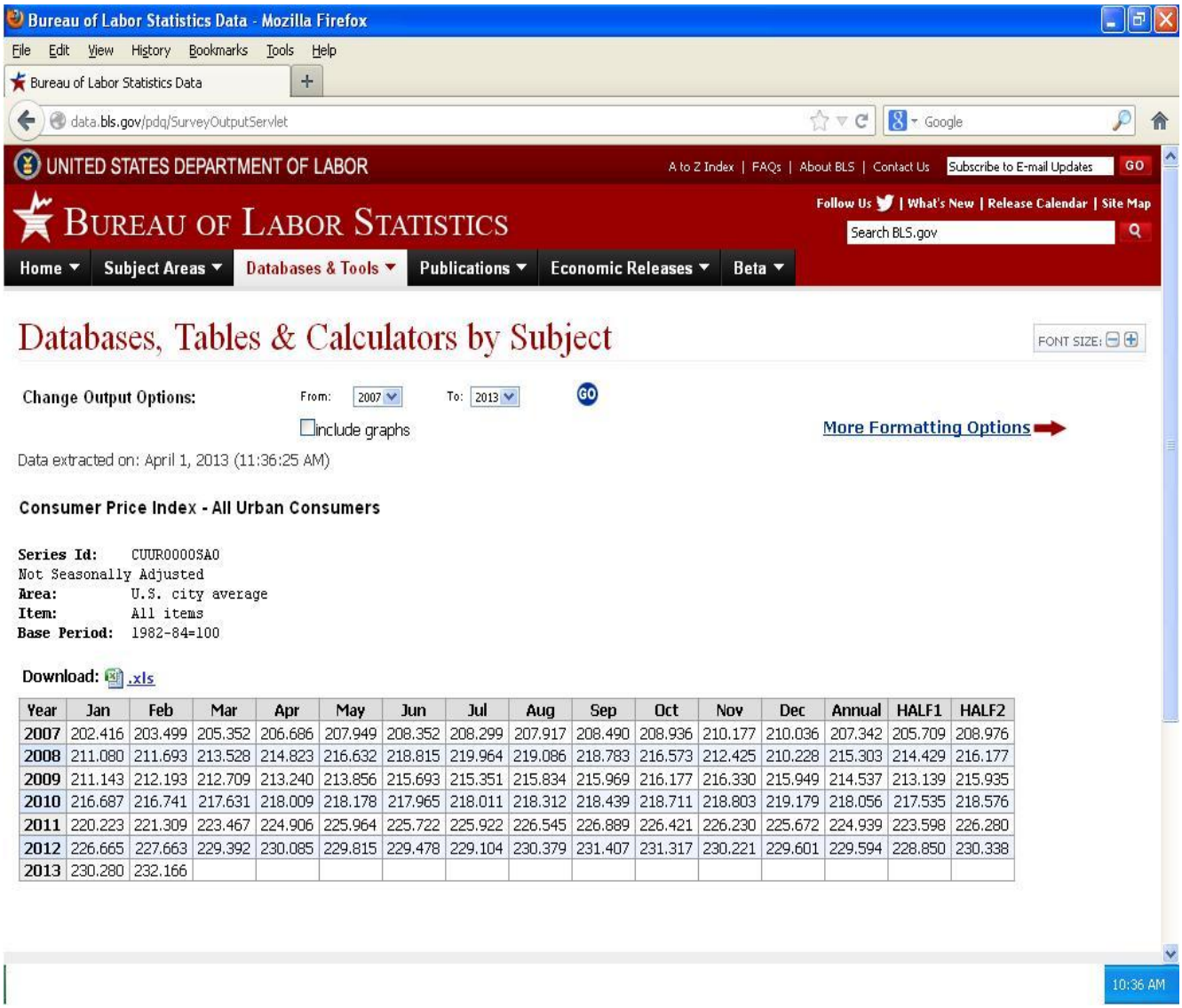
	CAIDI					
				2011 Customer Count		
	2008	2009	2010	*Fuse size	Actual	2012
T&D	137	134	139	124	128	134
Generation	26	29	42	29	29	28
System Total	103	86	89	78	78	92
Annual % Reduction	17%	17%	-3%	13%		-18%
Average Annual % Reduction	5%					

* Fuse size represents the previous method of computing customer count utilizing an estimation routine.

JPS average performance per year over the past 5 years averaged a reduction of 5%, 0.5% and 5% for SAIDI, SAIFI and CAIDI respectively.

Appendix I: U.S. and Jamaican Consumer Price Indices

U.S. Inflation



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	HALF1	HALF2
2007	202.416	203.499	205.352	206.686	207.949	208.352	208.299	207.917	208.490	208.936	210.177	210.036	207.342	205.709	208.976
2008	211.080	211.693	213.528	214.823	216.632	218.815	219.964	219.086	218.783	216.573	212.425	210.228	215.303	214.429	216.177
2009	211.143	212.193	212.709	213.240	213.856	215.693	215.351	215.834	215.969	216.177	216.330	215.949	214.537	213.139	215.935
2010	216.687	216.741	217.631	218.009	218.178	217.965	218.011	218.312	218.439	218.711	218.803	219.179	218.056	217.535	218.576
2011	220.223	221.309	223.467	224.906	225.964	225.722	225.922	226.545	226.889	226.421	226.230	225.672	224.939	223.598	226.280
2012	226.665	227.663	229.392	230.085	229.815	229.478	229.104	230.379	231.407	231.317	230.221	229.601	229.594	228.850	230.338
2013	230.280	232.166													

Appendix I: U.S. and Jamaican Consumer Price Indices (Con't)

Jamaican Inflation

Consumer Price Index

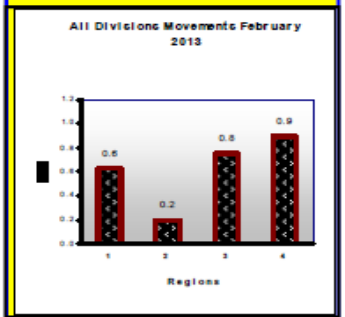
The Statistical Institute of Jamaica, 7 Cecelio Avenue, Kingston 10, Jamaica.





Inflation at a Glance:
February 2013

All Jamaica	+0.6%
Greater Kingston Metropolitan Area	+0.2%
Other Urban Centres	+0.8 %
Rural Areas	+0.9 %



All Jamaica Monthly Movements: 2012-2013

MONTH	YEAR	(%)
February	2013	+0.6
January	2013	+0.7
December	2012	+1.0
November	2012	+0.6
October	2012	+0.9
September	2012	+1.9
August	2012	+0.5
July	2012	-0.3
June	2012	+0.6
May	2012	+0.5
April	2012	+0.4
March	2012	+0.5
February	2012	+0.8

Release Date: Monday, March 18, 2013

February 2013

The All Jamaica 'All Divisions' Consumer Price Index for February 2013 was **195.0** with an inflation rate of 0.6 per cent. The on-going devaluation of the Jamaican dollar continued to influence higher prices, given the country's dependence on imported goods. The divisions in the CPI basket with the highest percentage movements over the past month were '**Alcoholic Beverages and Tobacco**' (2.0 per cent) and '**Clothing and Footwear**' (1.4 per cent). The increase in the index for 'Alcoholic Beverages and Tobacco' was due to higher prices for 'Spirits,' 'Wine,' 'Beer' and 'Tobacco,' while higher prices for both groups that make up 'Clothing and Footwear' influenced the movement for that division. 'Food and Non-Alcoholic Beverages', the highest weighted division in the 'basket', recorded a 0.4 per cent increase for the month.

In February, the calendar year-to-date inflation was 1.3 per cent, the point-to-point rate 8.1 per cent and the fiscal year-to-date 7.6 per cent.

Table I All Jamaica 'All Divisions' and Division Indices and Movements
(Base period December 2006 = 100)

DIVISIONS	Feb 2013 Index	Jan 2013 Index	Past Month	Year to Date	Point to Point	Fiscal Year 12/13
ALL DIVISIONS - ALL ITEMS	**195.0**	**193.8**	**0.6**	**1.3**	**8.2**	**7.6**
01 Food and Non-Alcoholic Beverages	230.2	229.3	0.4	1.2	14.2	13.8
02 Alcoholic Beverages and Tobacco	238.0	233.3	2.0	2.7	8.2	7.8
03 Clothing and Footwear	197.5	194.6	1.4	2.3	12.3	11.7
04 Housing, Water, Electricity, Gas and Other Fuels	209.4	207.2	1.0	0.5	4.2	3.3
05 Furnishings, Household Equipment and Routine Household Maintenance	189.6	187.8	1.0	1.7	9.6	9.2
06 Health	129.4	128.7	0.5	1.4	4.3	4.2
07 Transport	167.5	166.7	0.5	1.1	2.4	1.8
08 Communication	69.8	69.8	0.0	0.0	-39.4	-39.4
09 Recreation and Culture	161.1	160.7	0.2	1.0	6.9	6.6
10 Education	160.2	160.2	0.0	0.0	3.7	3.7
11 Restaurants and Accommodation Services	165.7	164.2	1.0	3.7	8.6	8.3
12 Miscellaneous Goods and Services	181.5	179.8	0.9	2.3	6.6	5.9

Appendix II: Estimated bill impact of annual tariff adjustment

Bill Comparison for a Typical Rate 10 Customer

	Usage	175	kWh	
Description	**February 2013**	**February 2013**		
	$	$	$	%
Energy First 100 Kwh	635.00	722.00		
Energy Next	1,089.00	1,238.25		
Customer Charge	322.50	387.00		
Sub Total	2,046.50	2,347.25		
Loyalty Reward	-	(250.00)		
F/E Adjust	195.53	-		
NON FUEL TOTAL	**2,242.03**	**2,097.25**	**-144.78**	**-6.46%**
FUEL AND IPP TOTAL	4,030.25	4,191.46	161.21	4.00%
BILL TOTAL	**6,272.28**	**6,288.71**	**16.43**	**0.26%**

Rates used for billing		
Energy First 100 Kwh (J$/kWh)	6.350	7.220
Energy Next (J$/kWh)	14.520	16.510
Fuel and IPP Charge (J$/kWh)	23.030	23.951
Customer Charge	322.50	387.00
Base Exchange Rate	87.50	98.50
Billing Exchange Rate	98.50	98.50
Usage (kWh)	**175**	**175**

Note: The fuel & IPP charge ($23.030) shown above is based on the actual rate used for billing in February 2013. That charge has been restated to $23.951 per kWh to reflect the impact of the proposed full pass-through of fuel costs.

Appendix II: Estimated bill impact of annual tariff adjustment (Cont'd)

Bill Comparison for a Typical Rate 20 Customer

	Usage	2000	kWh	
Description	**February 2013**	**February 2013**		
	$	$	$	%
Energy	23,598.00	25,954.00		
Customer Charge	709.50	851.40		
Sub Total	24,307.50	26,805.40		
F/E Adjust	2,322.41	-		
NON FUEL TOTAL	**26,629.91**	**26,805.40**	**175.49**	**0.66%**
FUEL AND IPP TOTAL	46,060.00	47,902.40	1,842.40	4.00%
BILL TOTAL	**72,689.91**	**74,707.80**	**2,017.89**	**2.78%**

Rates used for billing		
Energy (J$/kWh)	12.420	13.660
Fuel and IPP Charge (J$/kWh)	23.030	23.951
Customer Charge	709.50	851.40
Base Exchange Rate	87.50	98.50
Billing Exchange Rate	98.50	98.50
Usage (kWh)	**2000**	**2000**

Note: The fuel & IPP charge ($23.030) shown above is based on the actual rate used for billing in February 2013. That charge has been restated to $23.951 per kWh to reflect the impact of the proposed full pass-through of fuel costs.

Appendix II: Estimated bill impact of annual tariff adjustment (Cont'd)

Bill Comparison for a Typical Customer

Rate 40

Usage	**35,000**	**kWh**
Demand	**125**	**Kva**

Description	February 2013	February 2013		
	$	$	$	%
Energy	123,900.00	142,450.00		
Demand	166,605.00	191,596.25		
Customer Charge	5,160.00	6,192.00		
Sub Total	295,665.00	340,238.25		
F/E Adjust	28,248.68	-		
NON FUEL TOTAL	**323,913.68**	**340,238.25**	**16,324.57**	**5.04%**
FUEL AND IPP TOTAL	806,050.00	804,755.00	(1,295.00)	-0.16%
BILL TOTAL	**1,129,963.68**	**1,144,993.25**	**15,029.57**	**1.33%**

Rates used for billing		
Energy (J$/kWh)	3.540	4.070
Demand	1,332.84	1,532.77
Fuel and IPP Charge (J$/kWh)	23.030	22.993
Customer Charge	5,160.00	6,192.00
Base Exchange Rate	87.50	98.50
Billing Exchange Rate	98.50	98.50
Usage (kWh)	**35,000**	**35,000**
Usage (kva)	**125**	**125**

Note: The fuel & IPP charge ($23.03) shown above is based on the actual rate used for billing in February 2013 and adjusted for the full pass-through of fuel cost per kWh and the revised billing weights proposed for rate 40 customers.

Appendix II: Estimated bill impact of annual tariff adjustment (Cont'd)

Bill Comparison for a Typical Customer

Rate 50		
Usage	**300,000**	**kWh**
Demand	**1,000**	**Kva**

Description	February 2013	February 2013		
	$	$	$	%
Energy	1,008,000.00	1,158,000.00		
Demand	1,199,560.00	1,379,490.00		
Customer Charge	5,160.00	6,192.00		
Sub Total	2,212,720.00	2,543,682.00		
F/E Adjust	211,409.59	-		
NON FUEL TOTAL	**2,424,129.59**	**2,543,682.00**	**119552.41**	**4.93%**
FUEL AND IPP TOTAL	6,909,000.00	6,897,900.00	(11,100.00)	-0.16%
BILL TOTAL	**9,333,129.59**	**9,441,582.00**	**108,452.41**	**1.16%**

Rates used for billing		
Energy (J$/kWh)	3.360	3.860
Demand	1,199.56	1,379.49
Fuel and IPP Charge (J$/kWh)	23.030	22.993
Customer Charge	5,160.00	6,192.00
Base Exchange Rate	87.50	98.50
Billing Exchange Rate	98.50	98.50
Usage (kWh)	**300,000**	**300,000**
Usage (kva)	**1,000**	**1,000**

Note: The fuel & IPP charge shown above is based on the actual rate used for billing in February 2013 adjusted for the full pass-through of fuel cost per kWh and the revised billing weights proposed for rate 50 customers.

Appendix II: Estimated bill impact of annual tariff adjustment (Cont'd)

Bill Comparison for a Typical Customer
WT Rate 50 TOU

Description	February 2013	Revised February 2013	Change	
	$	$	$	%
Energy	5,370,382	4,027,787	(1,342,596)	-25.00%
On Peak Demand	1,679,378	1,931,278	251,899	15.00%
Mid Peak Demand	1,347,348	1,549,446	202,098	15.00%
Off Peak Demand	140,738	161,858	21,120	15.01%
Customer Charge	5,160	6,192	1,032	20.00%
F/E Adjust	815,730	-	(815,730)	-100.00%
NON FUEL TOTAL	**9,358,737**	**7,676,560**	**(1,682,176)**	**-17.97%**
On Peak Fuel	23,591,352	23,553,304	(38,048)	-0.16%
Mid Peak Fuel	15,142,370	15,118,448	(23,922)	-0.16%
Off Peak Fuel	3,635,585	3,343,219	(292,366)	-8.04%
FUEL AND IPP TOTAL	42,369,307	42,014,970	(354,336)	-0.84%
BILL TOTAL	**51,728,043**	**49,691,531**	**(2,036,512)**	**-3.94%**

Rates used for billing		
Energy (J$/kWh)	3.360	2.520
On Peak Demand	666.42	766.38
Mid Peak Demand	519.81	597.78
Off Peak Demand	53.31	61.31
Customer Charge	5,160.00	6,192.00
On Peak Fuel	29.976	29.928
Mid Peak Fuel	24.052	24.014
Off Peak Fuel	20.003	18.394
Base Exchange Rate	87.50	98.50
Billing Exchange Rate	98.50	98.50

On Peak Usage (kWh)	**787,008**	**787,008**
Mid Peak Usage (kWh)	**629,568**	**629,568**
Off Peak Usage (kWh)	**181,752**	**181,752**
On Peak Usage (kva)	**2,520**	**2,520**
Mid Peak Usage (kva)	**2,592**	**2,592**
Off Peak Usage (kva)	**2,640**	**2,640**

Note: The fuel & IPP charge shown above is based on the actual rate used for billing in February 2013 adjusted for the full pass-through of fuel cost per kWh and the revised TOU billing weights proposed for WT rate 50 customers.

Appendix II: Estimated bill impact of annual tariff adjustment (Cont'd)

Bill Comparison for a Typical Customer
WT Rate 40 TOU

Description	February 2013	Revised February 2013	Change	
	$	$	$	%
Energy	5,658,081	4,251,552	(1,406,529)	-24.86%
On Peak Demand	1,891,033	2,174,684	283,651	15.00%
Mid Peak Demand	1,520,078	1,748,097	228,018	15.00%
Off Peak Demand	149,345	171,758	22,414	15.01%
Customer Charge	5,160	6,192	1,032	20.00%
Sub Total	9,223,698	8,352,284	(871,414)	-9.45%
F/E Adjust	880,765	-	(880,765)	-100.00%
NON FUEL TOTAL	**10,104,463**	**8,352,284**	**(1,752,179)**	**-17.34%**
On Peak Fuel	23,591,352	23,553,304	(38,048)	-0.16%
Mid Peak Fuel	15,142,370	15,118,448	(23,922)	-0.16%
Off Peak Fuel	3,635,585	3,343,219	(292,366)	-8.04%
FUEL AND IPP TOTAL	**42,369,307**	**42,014,970**	**(354,336)**	**-0.84%**
BILL TOTAL	**52,473,770**	**50,367,254**	**(2,106,515)**	**-4.01%**

Rates used for billing		
Energy (J$/kWh)	3.540	2.660
On Peak Demand	750.41	862.97
Mid Peak Demand	586.45	674.42
Off Peak Demand	56.57	65.06
Customer Charge	5,160.00	6,192.00
On Peak Fuel	29.976	29.928
Mid Peak Fuel	24.052	24.014
Off Peak Fuel	20.003	18.394
Base Exchange Rate	87.50	98.50
Billing Exchange Rate	98.50	98.50

On Peak Usage (kWh)	**787,008**	**787,008**
Mid Peak Usage (kWh)	**629,568**	**629,568**
Off Peak Usage (kWh)	**181,752**	**181,752**
On Peak Usage (kva)	**2,520**	**2,520**
Mid Peak Usage (kva)	**2,592**	**2,592**
Off Peak Usage (kva)	**2,640**	**2,640**

Note: The fuel & IPP charge shown above is based on the actual rate used for billing in February 2013 adjusted for the full pass-through of fuel cost per kWh and the revised TOU billing weights proposed for WT rate 40 customers.

Appendix II: Estimated bill impact of annual tariff adjustment (Cont'd)

Bill Comparison for a Typical WT Rate 20 Customer

	Usage	500000	kWh	
Description	**February 2013**	**February 2013**		
	$	$	$	%
Energy	6,208,758	4,969,006		
Customer Charge	710	851		
Sub Total	6,209,468	4,969,857		
F/E Adjust	593,270	-		
NON FUEL TOTAL	**6,802,738**	**4,969,857**	**(1,832,880)**	**-26.94%**
FUEL AND IPP TOTAL	11,515,000	11,975,600	460,600	2.51%
BILL TOTAL	**18,317,738**	**16,945,457**	**(1,372,280)**	**-7.49%**

Rates used for billing		
Energy (J$/kWh)	12.420	9.940
Fuel and IPP Charge (J$/kWh)	23.030	23.951
Customer Charge	709.50	851.40
Base Exchange Rate	87.50	98.50
Billing Exchange Rate	98.50	98.50
Usage (kWh)	**500000**	**500000**

Note: The fuel & IPP charge shown above is based on the actual rate used for billing in February 2013 adjusted for the full pass through of fuel cost per kWh and the revised billing weights proposed for WT rate 20 customers.

Appendix III: JPS Comprehensive Loss Reduction Strategies

1.1 JPS System Loss Frameworks – A Deteriorating Problem

The current regulatory framework for addressing system losses has never worked and has virtually very little prospect of achieving its desired success in its current form. The framework failures include the methodology for determining loss targets, the embedded triple penalty, and the reliance on technology at its centrepiece to solve a problem that is primarily socio-economic in nature.

The most fundamental weakness, however, is the transfer of the crime prevention and punishment responsibility from the State to an electric utility that has neither the experience nor expertise to handle it. This framework therefore not only threatens the viability of JPS, but also endangers the lives of our employees in ways no other private goods or service provider in Jamaica has to contend with.

The loss target, which is determined with a high degree of subjectivity as it relates to commercial losses, has never been achieved over the past two decades.

System losses, which is primarily due to the theft of electricity, have been trending steadily higher, despite occasional dips. Over the past two (2) years actual outturn has moved from a "12 month rolling average" of 21.65 % in March 2011 up to 25.15% in February 2013. This trend has been driven by sustained high fuel prices, a shrinking economy and a crime permissive culture. Higher electricity prices and a stagnating economy have put upward pressure on all customer classes. This in turn has triggered conservation efforts, the increasing take up of off-grid alternative energy and pushing marginal customers to theft resulting in lower sales that translate into higher reported system loss.

This vicious cycle has effectively masked much of the success that has been achieved over the past five years in combatting losses. There can be little doubt that the growing tide is being partially held in check by the loss reduction programmes in place. Nevertheless, the increasing trend of reported losses (See Figure 1) confirms that JPS' effort, by itself, cannot overcome the combined social and economic forces at play and which must be prominently factored into the regulatory regime for losses.

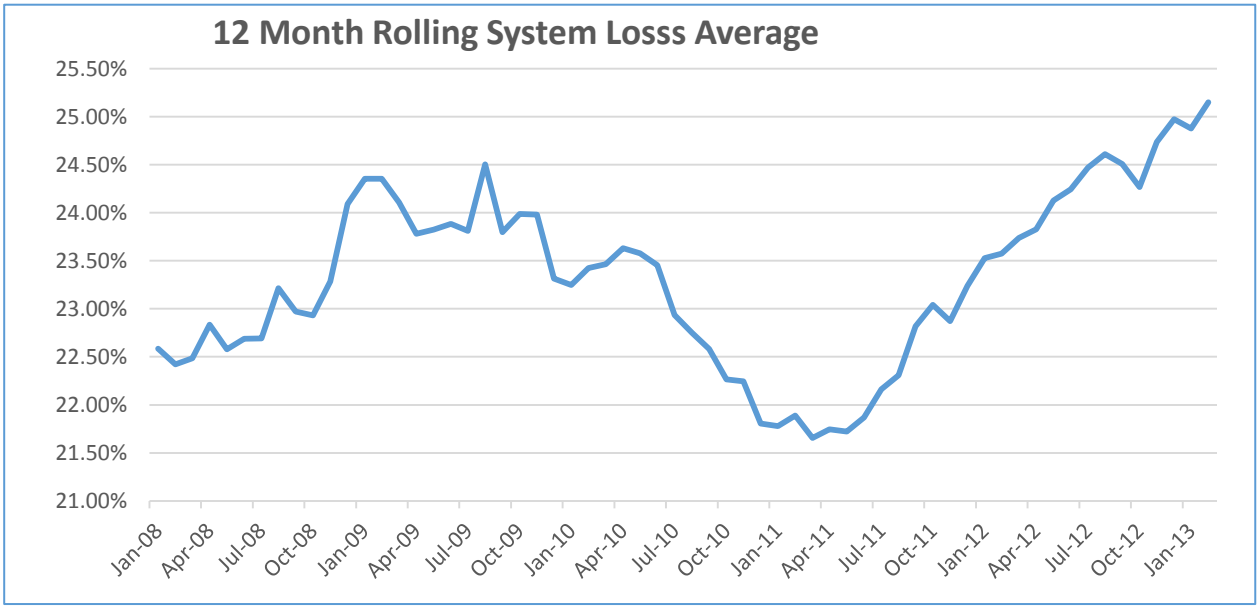


Figure 1. 12 Month Rolling System Loss Average

This important socio-economic context has largely been ignored in our regulatory framework although it is highly reflected in the continued deterioration in system loss performance despite the deployment of advanced technology, the quadrupling in the past five years of employees directly fighting theft and with additional financial resources allocated by the OUR. A credible and sustainable regulatory loss reduction strategy can only be successful when these fundamental socio-economic realities are addressed. JPS has no power to address these issues.

Failure to acknowledge this socio-economic reality will result in the OUR continuing to set unrealistic and unattainable targets (17.5% vs. actual losses at 25.15%) that will completely erode the viability of the electricity sector.

It cannot be emphasized enough, that losses and its impact on the fuel cost recovery represents the single most dangerous threat to the viability of the electricity sector today

We fully appreciate the tenets of performance based rate making, and the need to send a regulatory signal for efficiency improvements generally and specifically in relation to losses. However, we believe that the Regulator in fulfilling its mandate must also fully appreciate that an overly punitive regulatory framework, actually sharply reduces its effectiveness in achieving its regulatory objective, raises the risk of failure to the utility, which in turn proportionately diminishes its ability to serve customers.

1.2. Financial Highlights

The following key financial highlights demonstrate JPS continued investment in improving the robustness of the overall electricity network since the 2008.

	2008	2009	2010	2011	2012
EBITDA (US$ Million)	103.1	126	139.3	138.1	118.1
Profit after Tax (US$ Million)	6	42.2	40	34.3	12.7
CAPEX (US$ Million)	56.1	51.2	59.4	69.2	59.5
Total Debt (US$ Million)	299.2	343.2	405.8	425	416.7
Debt to EBITDA (US$ Million)	2.9x	2.7x	2.9x	3.1x	3.5x
	LOSS REDUCTION EXPENDITURE				
	2008	2009	2010	2011	2012
- O&M (US$ Million)	1.8	2.9	13.4	14.2	14.2
- CAPEX (US$ Million)	4.8	6.3	13.7	19.3	15.8
TOTAL	6.6	9.2	27.1	33.5	30.0

Table 1. Financial Highlights

The above Table 1, shows that in response to the regulatory signal, JPS has in fact substantially increased its investment in the fight against system losses since 2009. However, the breach in the financial covenants due to JPS' poor financial performance in 2012 now retards the Company's ability to raise additional capital to continue with this much needed capital investment programme and also puts US$425M in debt at risk of default due to an inability to meet certain loan obligations. This will necessarily impact our 2013 capital expenditure programme if not resolved, which includes US$18M to rehabilitate base load generating units and therefore our ability to maintain reliability standards.

1.3 Losses is a Triple Penalty for JPS

The OUR in seeking to incentivize JPS to reduce losses has effectively created three tiers of penalties for the company.

1. In setting the non-fuel tariff at the 2009 rate case, the OUR did not use the actual sales volume but instead used a higher sales volume, representing the theoretical sales volume that could be realized if the 19.5% losses target was achieved and 55% of those losses translated into additional sales. The net effect is a lower tariff and a penalty on JPS since 2009 to the extent that the additional sales did not materialize.

2. To the extent losses exceed the regulatory target and losses are growing JPS loses on the non-fuel revenue it does not collect from stolen electricity as would any other company suffering shrinkage. This is a normal and expected consequence.

3. *Fuel Penalty*. JPS is prevented from passing through the fuel cost associated with losses above the regulatory target and must absorb this cost. This type of penalty, in combination with the previous two penalties mentioned on non-fuel revenues is a highly unusual regulatory practice given that fuel typically represents the largest cost factor for utilities, as much as 67% for JPS. . Since system losses is a T&D phenomenon, it is considered that the appropriate penalty should be non-fuel, that is, of the nature, if not the exact form of the first two penalties described. Generation losses, as captured in the efficiency of fuel conversion is appropriately incentivised through the heat rate target mechanism.

   Additionally, the determination of the regulatory target is highly subjective (despite JPS offering a more objective basis for determining same as part of its 2009 tariff submission) and gives no consideration to the changes in the socio-economic conditions of the country. This penalty has become particularly corrosive on JPS' finances, resulting in a US$16M under-recovery in 2011 and a US$30M penalty in 2012. If this is not revised, the penalty will exceed US$30M in 2013 and certainly undermine JPS' status as a going concern. JPS simply cannot continue as a viable company sustaining this level of financial haemorrhage, which is directly linked to the reduction of the losses target to 17.5% in June 2011 in the face of an upward trend in electricity theft as evidenced by the continuous fuel penalty for every quarter since June 2011.

There is also an equal concern as to the subjective nature of how the productivity factor (X-factor) was also determined, being 2.72% currently. This is unusually high given the trend in U.S. inflation (less than 2.5% p.a.), the forecast for sales growth (or shrinkage), the high level of fixed costs the business faces and the challenges with meeting the regulatory system losses target. It is unrealistic to expect a business to become more efficient by 2.72% in an environment of declining sales, where most of its non-fuel revenues are unfairly tied to energy sales and it has an unreasonably low level of regulatory approved fixed charges (i.e. the tariffs are not truly cost reflective as it relates to the fixed cost nature of expenses).

The removal of the system losses penalty from the fuel cost along with the implementation of strategies to address the socio-economic elements of commercial losses is central to the viability of the company and to implementing the options that will ensure a holistic approach in the fight against commercial losses.

2.0 Review of JPS 2012 LOSS REDUCTION PERFORMANCE

Despite a major financial injection and a multipronged approach of operationalizing several loss reduction initiatives, losses continued to increase in 2012. The "12 month rolling average" was constantly over 24% within the last eight months of 2012, coming from a low of 21.65% in 2011,

During the period JPS launched a comprehensive loss reduction programme, with the focus on commercial loss activities. Most of the initiatives were operationalised and decentralised to get as many employees as possible involved with the single aim of reducing system loss.

In summary, the 2012 programme consisted of the following activities:

- Audits and Investigations
- Residential Advanced Metering Infrastructure (RAMI)
- Inactive to active - customer re-engagement
- Strike Force Operation - removal of throw-ups
- Distribution Power factor correction – (latter part of 2012)
- Feeder Phase Balancing – (latter part of 2012)

Even though the overall loss target was not met, the situation would have been much worse were it not for the result from the initiatives. Based on the expected impact of the various activities (see Table 3), the actual system loss outturn would have been 26.11% instead of 24.97%.

	Month	Net Gen (MWH)	Original Bill Sales (MWH)	Net Billing Adjustment (MWH)	LCD Billing Adjustment (MWH)	Bill Sales excluding LCD Adjustments	USD Contribution	System Loss prior to LCD Adjustments	LCD Contribution as % of Net Gen (Adjustment)	System Loss Reported
2012	Jan-12	337,341	242,169	(3,041)	1,607	240,562	433,937	28.69%	0.48%	28.21%
	Feb-12	322,195	250,234	(1,554)	6,035	244,199	1,629,523	24.21%	1.87%	22.33%
	Mar-12	340,420	259,422	5,402	7,167	252,256	1,934,969	25.90%	2.11%	23.79%
	Apr-12	334,603	252,461	1,794	4,440	248,021	1,198,853	25.88%	1.33%	24.55%
	May-12	356,875	264,190	4,188	5,122	259,068	1,382,973	27.41%	1.44%	25.97%
	Jun-12	356,639	269,501	3,969	4,450	265,051	1,201,414	25.68%	1.25%	24.43%
	Jul-12	368,716	275,834	(9,884)	3,599	272,236	971,643	26.17%	0.98%	25.19%
	Aug-12	361,304	270,266	942	3,794	266,472	1,024,412	26.25%	1.05%	25.20%
	Sep-12	350,142	268,426	2,704	4,582	263,844	1,237,196	24.65%	1.31%	23.34%
	Oct-12	328,240	255,139	350	3,101	252,038	837,282	23.22%	0.94%	22.27%
	Nov-12	335,407	244,814	331	2,459	242,355	663,983	27.74%	0.73%	27.01%
	Dec-12	344,037	250,569	(1,000)	487	250,082	131,490	27.31%	0.14%	27.17%
	2012 Total	**4,135,918**	**3,103,027**	**4,200**	**46,843**	**3,056,183**	**12,647,675**	**26.11%**	**1.13%**	**24.97%**

Table 3: Loss Reduction Activities Contribution to System Losses

2.1 Changes in System Loss

Month	NET GEN	ACTUAL BILLED	Monthly LOSSES	12 Month Avg
Dec -10	326,061	261,743	19.7%	21.80%
Jan-11	341,555	257,455	24.6%	21.78%
Feb-11	310,382	243,065	21.7%	21.89%
Mar-11	344,102	269,086	21.8%	21.65%
Apr-11	336,388	257,525	23.4%	21.74%
May-11	353,722	274,125	22.5%	21.72%
Jun-11	346,744	266,951	23.0%	21.87%
Jul-11	362,182	280,292	22.6%	22.16%
Aug-11	360,855	275,744	23.59%	22.31%
Sep-11	349,355	263,534	24.57%	22.82%
Oct-11	350,725	262,202	25.24%	23.04%
Nov-11	342,362	269,389	21.31%	22.87%
Dec-11	338,507	256,226	24.31%	23.24%
Jan-12	337,341	242,169	28.21%	23.53%
Feb-12	322,195	250,234	22.33%	23.57%
Mar-12	340,420	259,422	23.79%	23.74%
Apr-12	334,603	252,461	24.55%	23.83%
May-12	356,875	264,190	25.97%	24.13%
Jun-12	356,639	269,501	24.43%	24.25%
Jul-12	368,716	275,834	25.19%	24.47%
Aug-12	361,304	270,266	25.20%	24.61%
Sep-12	350,142	268,426	23.34%	24.51%
Oct-12	328,240	255,139	22.27%	24.27%
Nov-12	335,407	244,814	27.01%	24.74%
Dec-12	344,037	250,569	27.17%	24.97%

Fig. 2. 2011 to 2012 System Loss Performance

3.0 2012 Commercial Loss Reduction Projects

3.1 Audit, Investigations and Meter Replacement

3.1.1 Audit and Investigations

This involves the analysis of accounts to identify those with potential irregularities, followed up with field investigations. Suspected irregularities include meter tampering, direct connections, meter by-passes, etc. The targeted areas/communities were identified from the data on the top 20 worst losses feeders plus data received on individual theft or irregularities. Temporary metering and readings from clip-on instruments were used to further disaggregate the target areas and hence improve the strike rate. Revenue intelligence was also utilised in order to identify customer accounts with highest potential for revenue recovery. Investigation of 115,841 customer accounts yielded an overall recovery of 46.8 GWh. The work was mainly organised around customer groups based on their Rate Class:

1) Large Accounts – (multipliers > 1 and with usage > 1 MWh per month).

   - A total of 9,393 accounts were investigated, 1,503 of these accounts were discovered with irregularities, representing a strike rate of 16.0% and an overall recovery of 8 GWh.

2) Small Commercial Accounts – (multipliers < 1 and usage < 1 MWh per month).

   - A total of 5,687 accounts were investigated, 996 of these accounts were discovered with irregularities, representing a strike rate of 17.5% and a recovery of 8 GWh.

3) Residential Customer Accounts – (residential accounts with a multiplier of 1).

   - A total of 99,752 accounts were investigated, 18,828 of these accounts were discovered with irregularities, representing a strike rate of 18.9% and an overall recovery of 29.8 GWh.

4) Central Intelligence Unit – this unit is charged with the responsibility of providing support to all the above departments. Strategies are developed in order to identify potential accounts for investigation; these strategies are piloted through a specialised investigation team.

   - A total of 1,009 accounts were investigated, 215 of these accounts were discovered with irregularities, represents a strike rate of 21.3% and recovery of 1 GWh.

Year	Billed Sales with Adjustments (MWH)	Adjustments due to Energy Recovery (MWH)	Nominal Billed Sales without Adjustments (MWH)	Movement Year over Year
2008	3,129,903	20,982	3,108,921	
2009	3,231,465	26,391	3,205,074	96,153
2010	3,235,236	89,532	3,145,704	(59,370)
2011	3,175,593	70,083	3,105,510	(40,193)
2012	3,103,027	46,843	3,056,183	(49,327)

Table 4: Analysis of Organic Sales – 2009 to 2012

3.1.2 Meter Replacement Project - Electro-Mechanical to Electronic

JPS embarked on an initiative to replace approximately 25,000 electro-mechanical meters (or 4.2% of the population of meters) in 2012. These meters were originally installed prior to 1995. The average life of an electro-mechanical meter is typically 15 years after which it is expected to start degrading. Annual replacement of outdated meters is a normal mode of business for most utilities to help ensure overall metering accuracy over time. Replacement priority was given to those electro-mechanical meters along the highest loss feeders and concentrated urban areas in each parish. This was intended to aid in the losses initiative by way of improved billing accuracy after defective or degraded meters were replaced.

During 2012, a total of 29,840 meter changes were completed, exceeding the replacement target. Even though these accounts were not selected for or viewed to have irregularities, a total of 1,827 locations were found with irregularities other than that caused by the meter age.

3.2 Strike Force – Throw-up Removal

Strike Force Throw-up removal	
Target for 2012	72,000
No. of throw-up removed	98,714
% Completion	137%
Arrest made	76
Accounts Regularised	70

Table 6: 2012 "Strike Force" Performance

3.2 Re-engage Inactive Customers (Inactive To Active)

Customers who become inactive were disconnected mainly due to irregularity and non-payment of bill.

The aim of this initiative was to re-engage those customers who were made inactive in the past 12 months. The approach pursued was to visit targeted locations and ascertain whether or not the supply was still being used or needed and either establish a new contract on spot or disconnect and apply an anti-theft solution. A large number of these customers were found to have connection in a relative or friend name.

Target	Actual Completed	Variance	% Completed	Comments
6,298	6,049	249	96%	997 regularised

Table 7: 2012 Inactive to Active Engagement

4.0 2012 Technical Loss Reduction Activities (TLR)

4.1 Power Factor Correction

This initiative involved the monitoring of power factor on distribution lines and maintain a Distribution feeder Power Factor range of -0.95 < P.F < 0.98

4.2 Phase Balancing

Routine monitoring of feeder Phase imbalance to maintain < 10% at the recloser

TLR Activities	Target Feeders	Actual Completed	Variance	% Completed
Power factor	20	20	0	100%
Phase balancing	10	9	1	90%

Table 8: 2012 Technical Loss Projects

5.0 Residential Automated Metering Infrastructure (RAMI)

Over the period 2009-2012 JPS have installed RAMI in 19 communities within the parishes of Kingston, St. Catherine and St. James, the three parishes with the highest concentration of losses. Twenty seven thousand (27,000) meters have been installed with twenty thousand (20,000) of these still being active. The average losses in these communities before the programme was 88%, the average within a month after the new infrastructure was cutover was 9% and the average losses within these communities as at end of December 2012 was 21%.

The average loss of 21% coming down from 88% is indicating that, for the most part, there has been a certain degree of success with the programme. However, it will require constant monitoring and repeat visits to the areas to address system breaches and to restore customer supply as a result of attempted breaches. In some areas it is compromising our reliability indices and our employees are at risk of attack and reprisals.

For the most part the integrity of the meter enclosures has been preserved but an increasing source of network vulnerability is the streetlight circuit for which we're advanced in developing a technological solution. However it is clear that any technology-based solution will require constant monitoring and periodic redesign to avoid breaches, as the experience in other countries has attested. This Of course drives up constantly the cost of this infrastructure per customer with marginal returns at best in the short-term.

5.1 Design Changes

As a result of breaches and desire to improve communication, there have been a number of design and supplier changes over the last two years. One of these changes was to redesign the transformer casing to directly mate with the metering cabinet to prevent a common attempt to breach between the two components. Figs. 4 & 5 illustrate the old and new designs.

Figure 5: Second Design

Figure 4: First Design

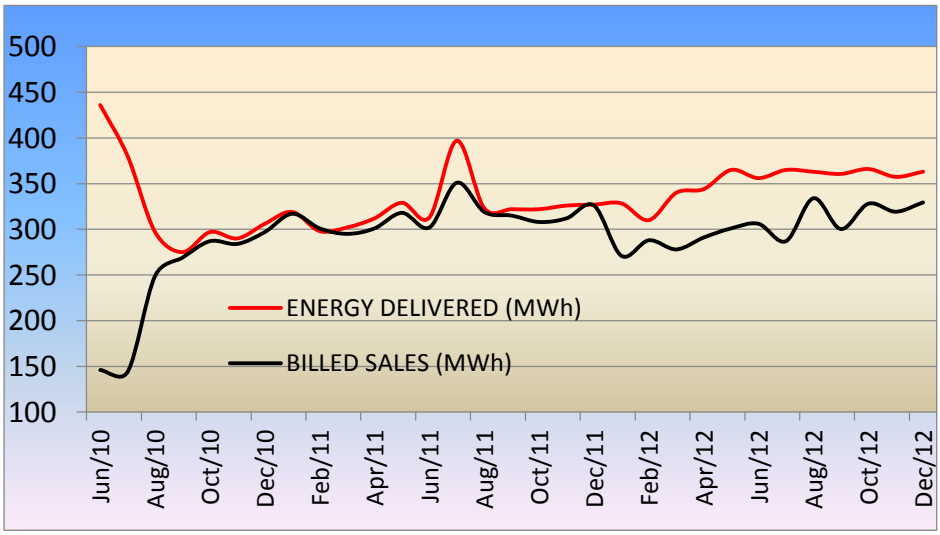
Fig. 4 - The First RAMI Design – Separate Enclosure and Transformer

5.2 2012 RAMI Projects

During 2012, JPS added over 6,700 customers to the RAMI network which, coupled with the connections since 2010, has increased the total regularized customers added to the JPS network to approximately 20,000 customers. The cut-over areas in 2012 include:

1) Projects that started in 2011 but had additional RAMI extension to customers in adjoining areas in 2012. This helped to sterilise the community boundaries with the removal of exposed secondary circuits in the adjoining communities.
    - Approximately 869 new customers in the Arnett Garden Community
    - Flankers, Providence Heights in St. James added approximately 780 new customers
2) A new RAMI infrastructure that utilises remote communication via GPRS technology.
    - Approximately 1,169 new customers in the Payne Land and Delacree Communities of Kingston;
    - Approximately 744 new customers in sections of Whitfield Town and Maxfield Ave community.
    - Approximately 770 new customers in Greenwich Farm
3) Existing communities projects at Denham Town, Tivoli gardens, Trench Town/ Rema, Rose Town, Mid Town, Naggos Head, Hurlock, Old Harbour Bay, Pitfour, Seaview Gardens and Retirement added another 2500 new customers in 2012.

5.3 Usage Trend of Previous RAMI Projects up to Dec. 2012



- Losses before – 67%
- Losses at cutover – 2%
- Losses in Dec 2012 - 9%
- Total Active accounts in Dec 2012 - 1908

Fig 6. Old Harbor Bay (Cut-over Sept 2010)

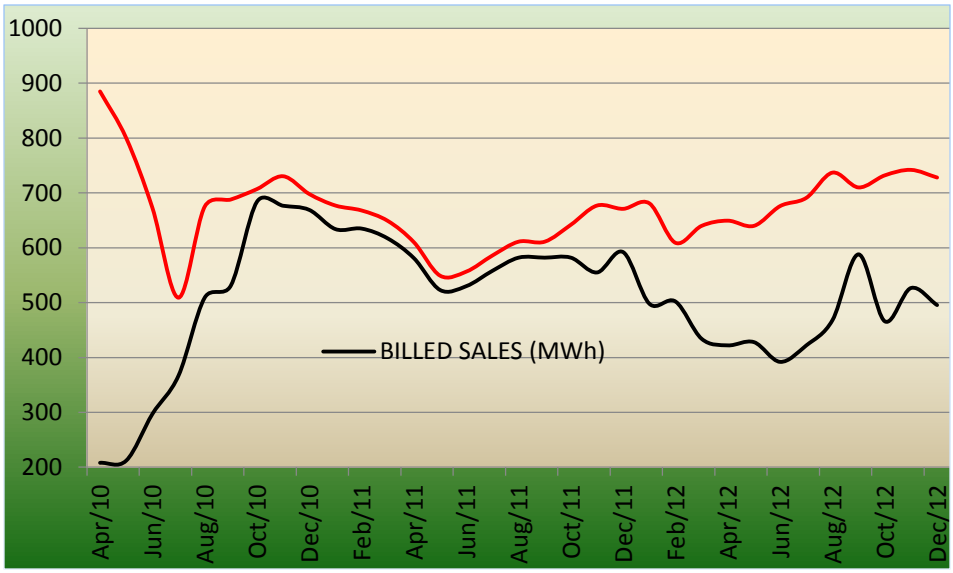
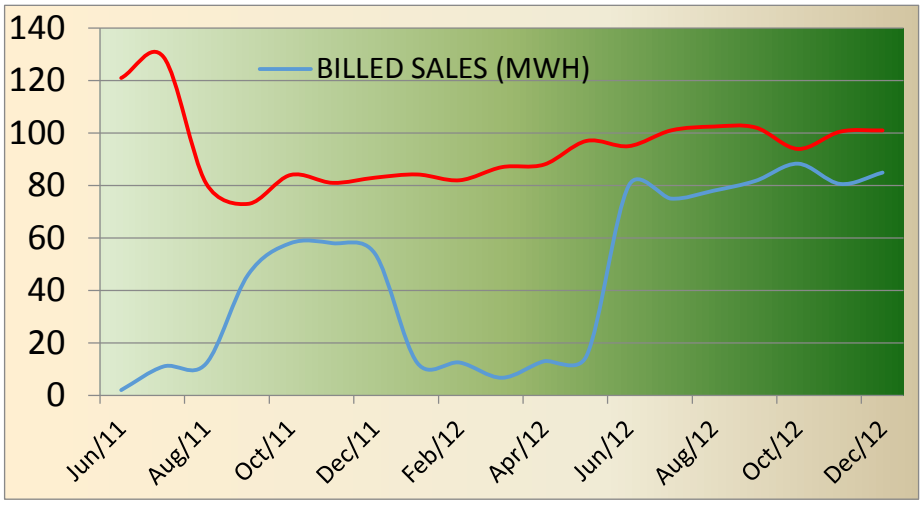


Figure 7. Seaview Gardens

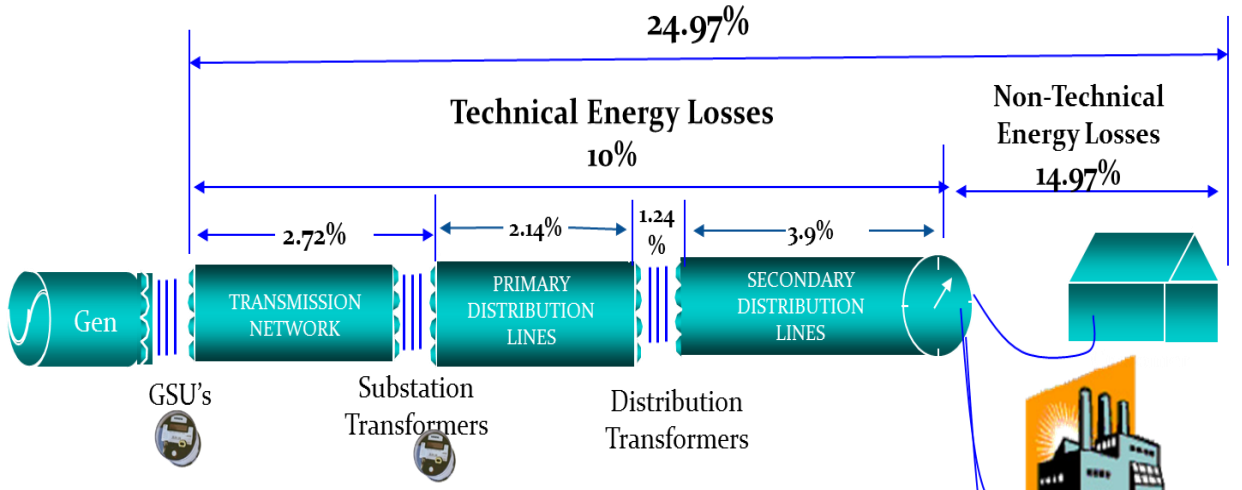
- Losses before – 76%
- Losses at cutover – 5%
- Losses in Dec 2012 - 44%
- Total Active accounts in Dec 2012 - 2731



- Losses before – 98%
- Losses at cutover – 28%
- Losses in Dec 2012 - 18%
- Total Active accounts in Dec 2012 - 553

Figure 8. Rose Town – (Cutover Nov. 20110

6.0 December 2012 Energy Balance Spectrum



Description/Category		No. of Cust.	Bill Sales (MWH)	Energy Loss (MWH)	% Loss
Billed Customers	Streetlight/Stoplight (R 60)	251	5,859	292	0.08%
	Large C&I (Rate 40 & 50)	1,870	117,758	561	0.16%
	Small C&I (rate 20)	61,977	51,275	5,578	1.62%
	Residential (rate 10)	531,382	86,367	22,477	6.52%
Sub-Total		595,480	261,259	28,908	8.39%
Other Non-Technical Losses				203	0.06%
Un-metered Households		150,000		22,500	6.53%
Total		745480	261,258.5	51,611.5	14.97%

Fig 9. December 2012 Energy Balance Spectrum

The spectrum above shows that by far the larger part of the losses was due to non-technical losses (14.97% of the 24.97%).

Of this, the majority is linked to the 150,000 informal householders' island-wide that have illegal electricity, as reported by the recent government census, and other residential users. The control of this is even more worrying when you consider the 2009 World Bank survey, which reported that electricity service is available to 92% of the population in Jamaica.

7.0 JPS 2013 Comprehensive Loss Reduction Strategies

Based on the list of strategies for 2013 outlined in Table 9, cumulatively, the activities are expected to yield an annual recovery of 65.85 GWh, at an investment of approximately US$ 27.27 million.

- Capital Investment: US$ 13.63 million
- Operating Expense: US$ 13.64 million

The plan is to maintain an ongoing reduction of losses across the system by multi-pronged and sustainable activities such as;

a) Energy Balance Metering & Monitoring

b) Account Audit & Investigation of accounts

c) Strike Force operations – "Take back Jamaica"

d) Controlled Amnesty – Inactive to active Customer Re-engagement,

e) Recloser Energy Limiting Initiative (RELI)

f) Residential AMI and Commercial AMI

g) Technical Loss programmes

Initiatives	Quantity	Project Time (Mths)	CAPEX Costs (US$'000)	OPEX Cost (US$'000)	2013 Benefit (MWH)
Total Metering	64	6	550.4	300	-
RAMI	9200	6	8,243	1,243	7,406
Commercial AMI	800	6	1,015	108	2,040
Audit & Investigation	100,000	12	300	7,168	39,875
Removal of Throw-Up	294,000	12	-	862	282
Controlled Amnesty - Inactive to Active	2,000	12	-	1,161	413
Secondary Rehab	3,000 Circuits	15	1000	600	413
Trans - VAR correction	6 Substations	15	800	500	4120
Dist - PF Correction	50 Feeders	12	500	600	3304
RELI	11	5	1075.2	300	5110
Phase Balancing	40 Feeders	12	150	800	2891
Total			13,634	13,642	65,854

Table 9 : JPS 2013 Comprehensive Loss Reduction Strategies

7.1 Energy Balance Metering and Monitoring

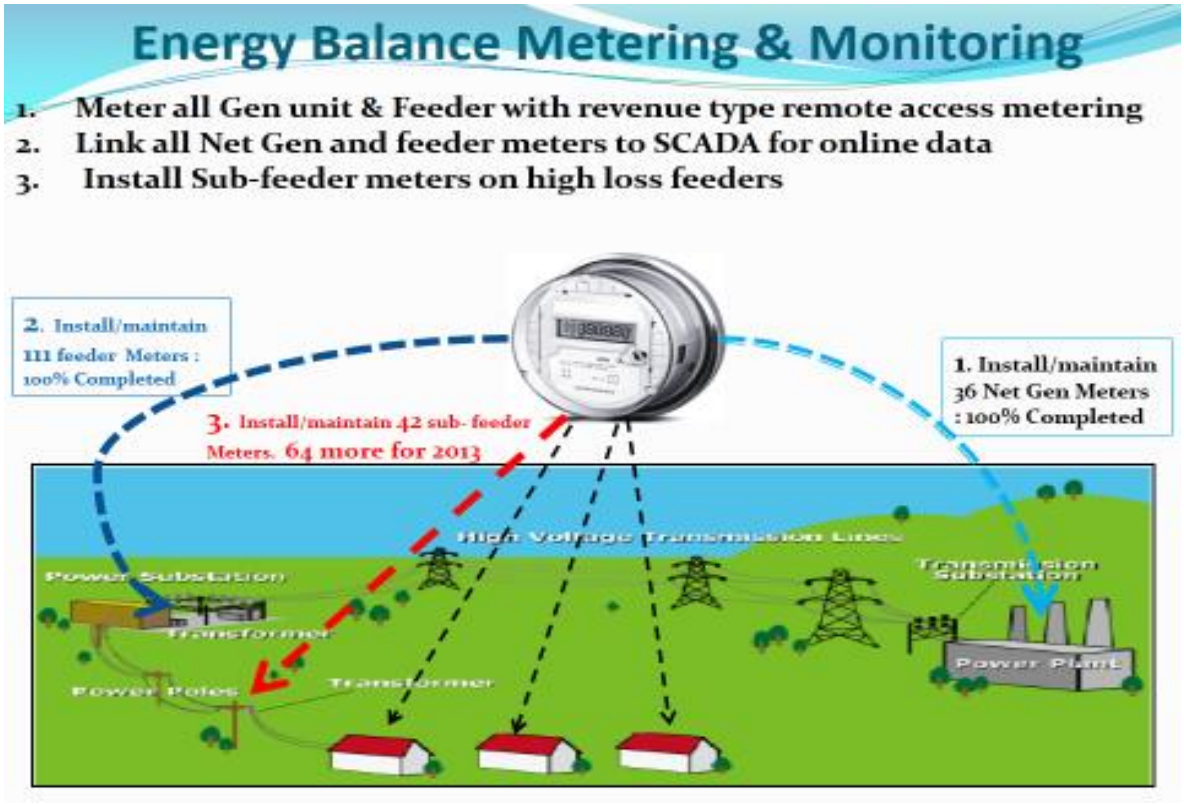


Fig 10. Energy balance Metering Energy

7.1.1 Energy Balance Metering - Sub-Feeder Metering

A key component of the overall Loss Reduction Strategy is the implementation of additional sub feeder-level metering, which will provide a new level of detail for JPS to prioritise high loss areas requiring attention. Decisions for meter locations will be based on knowledge of feeders with high losses and localised knowledge of 'problem areas'. Metering of individual transformers on a temporary basis, especially in commercial areas can help pinpoint locations where theft is occurring. Combined with aggregated AMI meter data, this information will not only identify areas where audits need to be performed, but also provide on-going monitoring to ensure that system integrity is maintained.

7.2 Account Audits and Investigations

JPS plans to conduct 'blitz' style (group) investigations of commercial areas that have a history of high losses. The raids will include a large number of investigators to look for irregularities at a number of co-located commercial establishments, which should minimize the effects of forewarning that might allow nearby businesses to correct irregularities prior to JPS arriving.

In conjunction with these blitz raids, there is also a plan to conduct night time reconnaissance work to ascertain the types of activities and expected consumption occurring outside of normal business hours. Information obtained off-hours will then be integrated into the analysis to improve the quality of investigations and prioritize the locations to be investigated.

There are indications that increasingly theft of electricity is being done after hours due to a perceived lower risk of detection. As part of the surveillance efforts, JPS will install remote connected "AMI Check meters" at businesses where theft is suspected. The interval data captured by the AMI meter for a period of time can be compared to the observed level of activity occurring at the location. Once service irregularities are corrected, the AMI meter will be left in place for monitoring. The projection is for 100,000 investigations in 2013 which should lead will lead to approximately 40 GWH of recovery. The figure below shows the importance of audit recovery in reducing system loss.

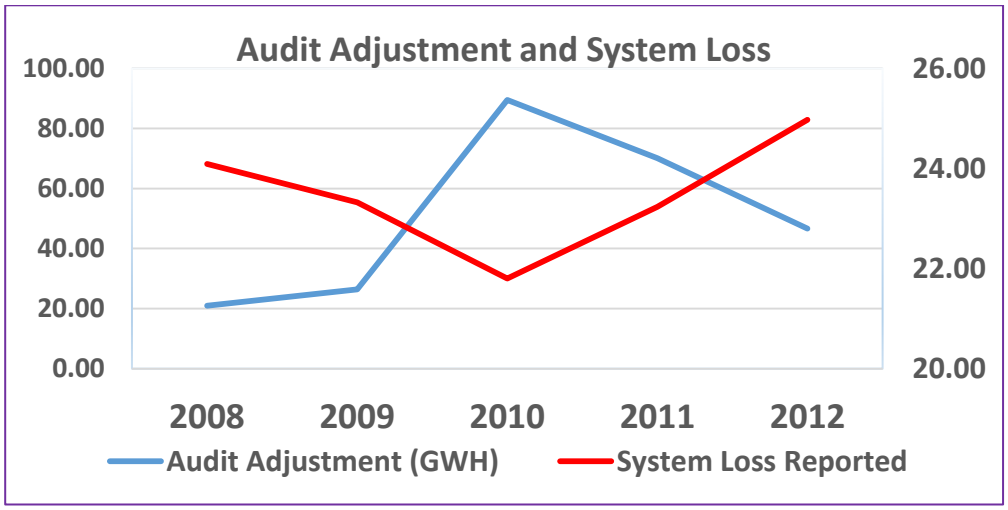


Fig 11. Comparison between Audit Adjustment and System Loss

7.3. Controlled Amnesty - Inactive To Active Customer Engagement

JPS plans a two-phased approach to regularise customers who have been made inactive in recent years but still need supply. Most of these inactive customers have been disconnected for either non-payment or irregularities at those locations. The effort to regularize these customers will target approximately 30,000 locations. The second phase will involve customers who have been inactive for more than a year. These will require recertification of their service, before it can be reconnected. JPS will provide the assistance of licensed electricians to assist customers with recertification.

For both phases, JPS will work with customers to create flexible payment arrangements for any arrears that exist. A part of this strategy is the installation of RAMI meters, where appropriate.

7.4 Increased Strike Force Activity -*"Take Back Jamaica"*

Illegal 'Throw-Up' connections are an on-going problem that has been difficult for JPS to eradicate and represent the most visible and brazen theft of electricity. JPS is placing special focus on this to prevent the contagion effect.

The "Take Back Jamaica" plan aims to frustrate these consumers into regularising their supply. The plan for 2013 is to remove 294,000 throw-ups across the island.

Strike Force teams comprising of linemen, technicians and security force (police) will relentlessly and repeatedly remove illegal connections and increase arrest of occupants in known high-loss areas, through continual raids over a year-long period. This will also involve a high level of arrest.

Fig 12. Numerous "Throw-up" in Majestic Gardens

While JPS is resolved to continue this programme, ultimately its sustainability is dependent on legislative and regulatory backing that will apply meaningful criminal and financial sanctions to perpetrators of electricity theft.

Strike-force Activities				
Date	**No. of Throw-ups Removed**	**No. of Idle Service**	**AMP Reading**	**Arrests Made**
Total for 2012	**98,714**	**8,500**		**76**
01-Jan-13	16,769	2,493	39,099	3
01-Feb-13	21,983	1,996	79,190	43
01-Mar-13	4,266	319	14,673	1
2013 YTD	**43,018**	**4,808**	**132,962**	**47**

Table 10: Comparison between 2012 "Strike Force" Actual and 2013 YTD

7.5 The Use of Reclosers to limit illegal abstraction

The aim is to ensure that load shedding due to under-frequency trips in the first instance affect consumers on high loss feeders or line sections before impacting the general customer base. To this end we are looking to:

- ✓ Re-organize the opening points of adjoining feeders based on high loss areas.
- ✓ Install pole-line Reclosers & total meters in cases where its feeder section. (Communities of high loss > 60%).

Fig 13. An Installed Recloser

7.6 Expansion of RAMI and Installation of New CAMI Pilot

The technology that offers the best sustainable long-term prospect and the most immediate benefit to the reduction of non-technical loss is the installation of anti-theft metering infrastructure (AMI). To date, over 27,000 RAMI have been installed in areas prone to high theft of electricity. Existing installations, have already demonstrated AMI's ability to minimize losses in residential areas. The remote configuration of the RAMI metering eliminates customer access to the metering device, thereby preventing meter tampering or bypassing. It also eliminates the unmetered secondary wires that are vulnerable to throw-up connections.

During 2013, JPS will install an additional 9200 Residential AMI (RAMI) and 800 Commercial AMI (CAMI) meters in high loss areas. The majority of RAMI installations will be in new and/or incomplete communities. These are areas where JPS has historically experienced a large number of illegal connections.

The (800) 3-phase CAMI meters, which will be installed in high loss commercial areas, is a pilot project. These higher consumption commercial locations are prone to larger losses per customer, hence each meter will provide a larger payback.

The payback for these infrastructure is less than two years and the expected energy sales for 2013 will be 9.4 GWH from 5 months of Bill Sales.

Fig 14. The New CAMI Enclosure

8.0 JPS Technical Energy Loss Programs

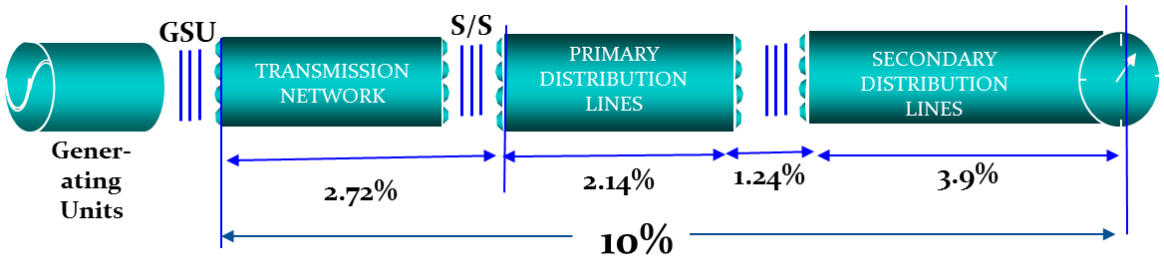


Fig 15. JPS Technical Energy Loss Spectrum

JPS Technical Energy Loss is estimated at approx. 10.0% of net Gen.

- The transmission & substation section is now measured – 2.72 %
- Transformers - Manufacturers data used – 1.24 %
- Primary & Sec lines - JPS operating conditions & GIS data used with SynerGEE for load-flow simulation – 6.04 %.
- Values consistent with International consultants' reviews.

JPS Optimal Technical Energy Loss

- The optimal value is based on network configuration, topology, voltages and economic feasibility is approximately 7.6 %.
- Require short, medium and long term strategies (1.5% or more than half of the reduction would be from medium to long term initiatives).
- In most instances the initiatives will require very high CAPEX cost.

8.1 2013 Technical Loss Initiatives

1). Power Factor Correction

a) Monitor & maintain a feeder Power Factor range -0.95 < P.F < 0.98

b) Complete bulk banks installations at Constant Spring & Good Year S/S

c) Re-do VAR study to ascertain the additional bulk bank requirement on Transmission lines

2). Phase Balancing

d) Routine monitoring of feeder Phase imbalance to maintain < 10% at the Recloser.

3). Distribution Voltage Standardization Program (VSP)

e) Redo study on cost-benefit of Primary Distribution voltage upgrade because of the large increase in fuel price in recent times.

4). Secondary Rehabilitation

f) The majority of the Secondary rehabilitation will be realised from the RAMI projects.

9.0 Pre-paid Metering Pilot

JPS has plans during 2013 to utilize RAMI customer locations to implement a pre-paid metering pilot for 1,000 newly regularized customers. Prepaid metering has been used successfully around the world for over 20 years. While it is not viewed as a direct loss reduction strategy, pre-paid will be an important complementary programme to improve the success rate for the other initiatives by providing post regularisation usage and budget control for customers. JPS RAMI systems are prepay compatible, very easy to implement and convenient for customers to use. Upon completion of the pilot, JPS will evaluate the cost benefit of implementing a full prepaid programme.

Appendix IV: Outage Management System Implementation Status

Background

JPS has been engaged in the development of an Outage Management System (OMS) since 2010 when the company commissioned an in-house customised programme to address a narrowly defined need and therefore had very limited scope for integration with other critical IT platforms across the Company. In September 2012, after a change of leadership within the IT function at JPS, all on-going projects and existing systems were reviewed for consistency in keeping with a new philosophy for systems implementation that was developed with the following guiding tenets:

- All systems, as far as is possible will be procured from leading edge vendors with established products widely deployed
- Customisation, will be kept to a minimum, and systems will be maintained in a generic state as far as possible
- The modern world class business process, usually embedded in these Tier 1 and Tier 2 systems will be adopted by JPS unless there are local safety and regulatory issues which dictate otherwise
- As far as is possible, disparate systems will be integrated in a cohesive manner to reduce level of manual handoff and broken processes impacting the organisation

OMS RFP Process

Based on the above, the development of the in-house Genome (OMS) was suspended in October 2012, and a competitive Request For Proposal was issued to the market to acquire and implement an off-the-shelf OMS.

After an initial research process, a formal Request for Information (RFI) document was submitted to ten (10) established vendors as follows:-

- Schneider (Telvent)
- Milsoft
- *Oracle*
- IBM
- Open Systems Interconnection
- Ventyx ABB
- Intergraph
- TVD
- *Illuminat*
- *Adjoined Business Solutions*

A cross-functional evaluation team was formed to oversee the selection process. There were seven responses, with two (2) vendors bidding on the Oracle product. Four (4) vendors were shortlisted and invited to present their systems.

The evaluation process was executed in three (3) phases.

- Phase 1 : Functional Compliance
- Phase 2: Adherence to industry standards and the market profile of the vendors.
- Phase 3: Ability of the vendors to demonstrate key system functions, Project management and support capabilities.

The RFP process began November 2012 and a preferred supplier chosen in February 2013 and contract executed on March 15, 2013.

The Preferred Supplier

Ventyx ABB was selected as the preferred vendor based on the evaluation outcome. It was the consensus of the evaluation team that the Ventyx ABB product offered the best solution package; the application is well engineered, the user interface is friendly, it is highly configurable and lays the foundation for future integration in a Distribution Management System.

In order to benefit from the functions of OMS, there are several key systems which must be integrated in order ensure maximum efficiency of the system. These are as follows:-

- **Geographic Information System (GIS):** Required to provide the electrical model of assets and the association of customers. The accuracy of this model is extremely critical in ensuring the correct identification and correction of faults.
- **Banner CIS (Service Suite):** Required to identify JPS customers and their current status
- **SCADA-EMS:** Required to provide notification of outages on devices
- **Interactive Voice Response (IVR):** Required to provide automated notification on outages and restoration activities.

All of these JPS sub-systems are at varying stages of readiness for integration into the OMS and therefore have had some impact on the ability to roll out the OMS on an earlier schedule that would still allow benefit to the full range of benefits from the system.

For example the GIS database is undergoing a scrub to verify the asset data that will underpin the OMS function. The Banner CIS suite will be upgraded to provide a richer and wider suite of functionality that can enhance the data management and reporting functionality of the OMS.
The current IVR will also be upgraded to provide a state-of-the-art platform for the OMS to provide automated and real time updates to customers on outages and restoration activities.

These upgrades and verifications are expected to be completed by December 2013 in time for the implementation rollout of the OMS as detailed later.

The main users of the system will include the following groups:-

- **Customer Care Centre Agents**: They will record outage information and provide updates to customers on restoration activities
- **Dispatch Centre**: The team will monitor outages received and dispatch and manage outage activities.
- **GIS Engineers**: The team will review the data disparities generated by the OMS are effect the necessary changes.

OVERVIEW OF PROPOSED SYSTEM

The core of the chosen solution is the Ventyx Network Manager DMS Outage Management that includes best in class technology. The solution includes Network Manager (OMS) for core outage management and restoration solution.
The OMS is astorm proven solution that provides a technology solution that will allow JPS to monitor, manage, report, and react quickly to changing conditions during a storm event. In addition information can easily be disseminated through the organization as well as to customers, public officials, and emergency responders.
In addition with an improved outage management and restoration process there are various other procedures and processes that are internal to JPS that the technology by itself won't be able to improve but will enable business process improvement.

Network Manager (OMS)
Network Manager is the first step in JPS replacing the current home-grown OMS; it will also be the basis for the full solution and the base platform of Ventyx's key technology components.
Network Manager OMS also provides JPS with the option to expand the functionality of the OMS by adding advanced applications such as Fault Location, Restoration Switching Analysis, Unbalanced Load Flow analysis on the same platform, utilizing the same network model and user interface improving operator work flows and reducing the total cost of ownership.

Architecture and Interfaces to Other JPS Systems
As shown in the diagram below**,** our OMS solution architecture consists of two tiers:

1. The control room tier, which consists of the main servers, and operator workstations/clients located on a secure LAN.
2. The DMZ, which includes web servers for remote access to the system, call-taking, dashboards, lower-level outage handling and crew assignment capabilities.

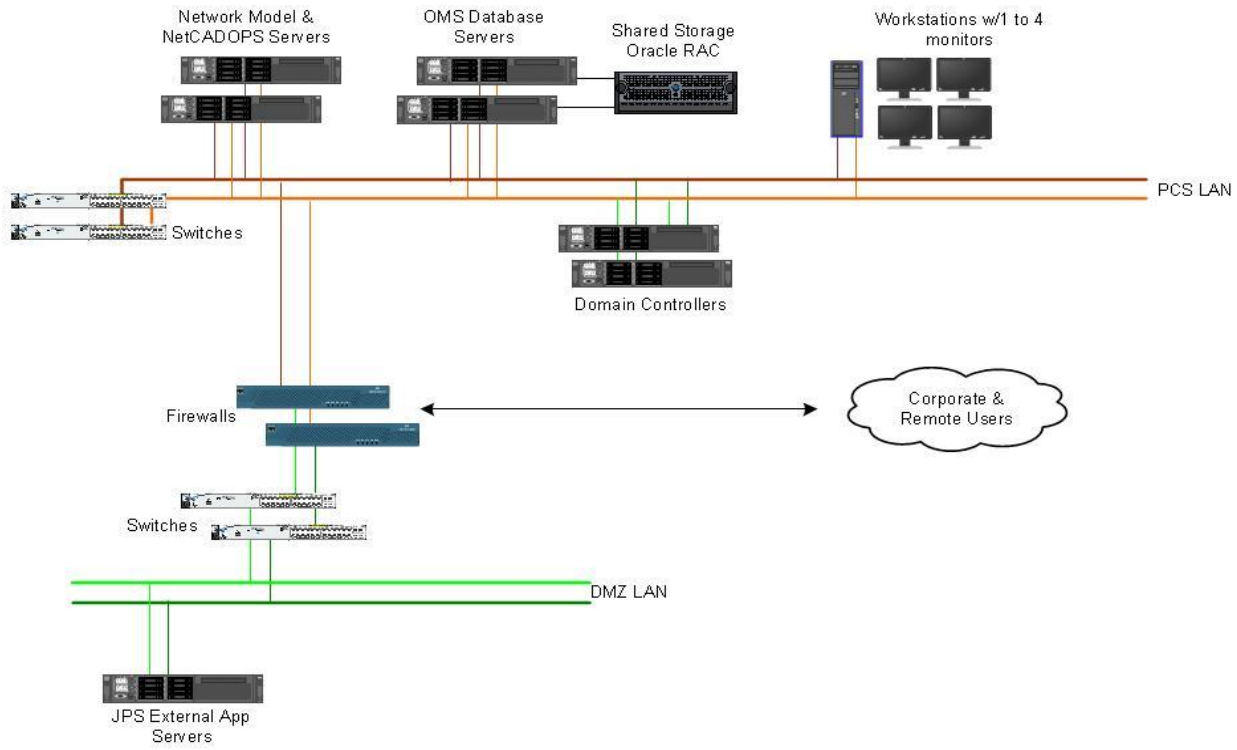


Figure 2 – JPS OMS Solution Architecture

The Network Manager DMS server application and Oracle database can run in a UNIX or Linux environment. The server application includes system supervision, functions to maintain synchronization of the Oracle database and the contents of shared memory, outage analysis, message brokering, and other functions. The OMS Web Server runs on UNIX or Linux, allows browser-based clients to access the system, and supports tabular displays for Calls, Dispatch, Crew Administration, Executive Reports, Reports, and Administration.
This will be implemented in a redundant mode for the primary OMS system, utilizing Oracle RAC and our system supervision process. This system architecture allows for easy expansion regarding functionality (such as the addition of distribution SCADA/DMS), and easy expansion for scalability purposes. Expansion in the number of operator workstations has virtually no impact on server requirements or performance.

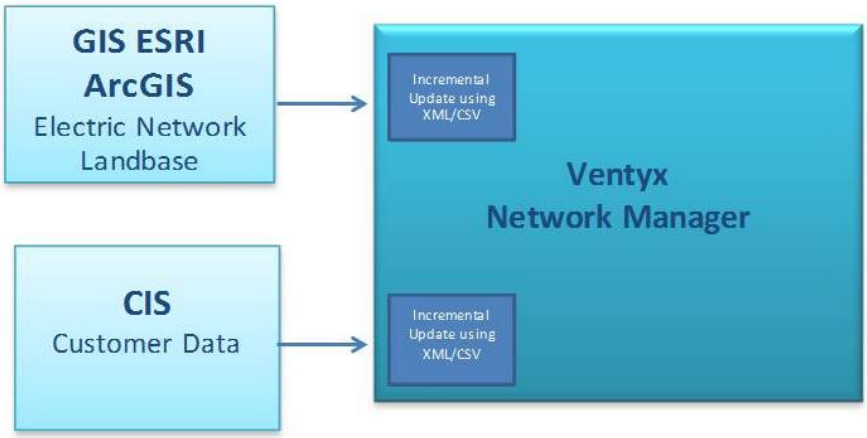


Figure 3 – Ventyx Network Manager Integration Architecture

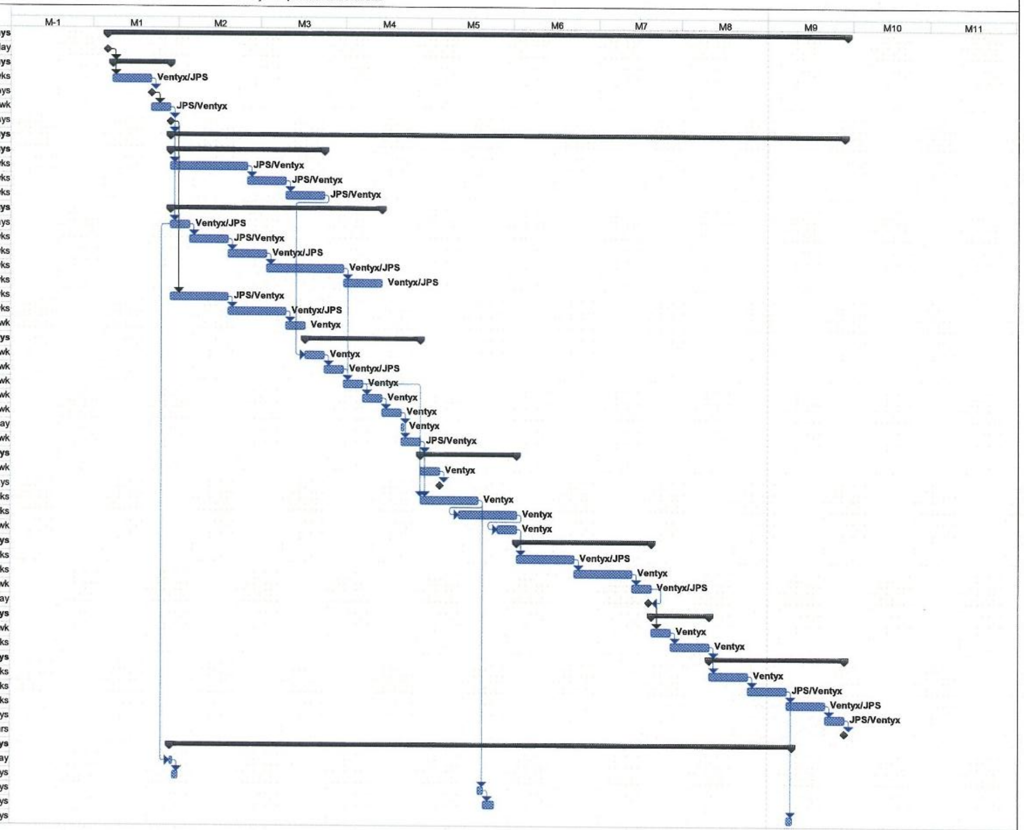
GIS
Network Manager has been interfaced with a variety of GIS systems, including ESRI, Intergraph, SmallWorld and several other GIS systems such as CableCAD, AutoCAD with Oracle underneath and homegrown GIS systems. Data is extracted via XML files, comma delimited text files or shared Oracle tables. The data is then imported into the Network Manager DMS run-time environment using the Network Manager DMS incremental update process.

CIS
Network Manager DMS standard API allows customer data to be updated either on a nightly basis or on a near real-time basis for connects/disconnects. Many CIS systems have been interfaced, including Customer One, SAP, Ventyx Customer Suite, ATS and various homegrown systems.

Project Status
The contract with Ventyx for the implementation of OMS was executed on March 15, 2013. Project start up is scheduled for April 8, 2013. The proposed milestone plan is included below and is scheduled for 6 to 7 months. The system will support all outage efforts in JPS from Q1 2014.

Project Implementation Schedule

ID	Task Name	Duration
1	**JPSCO OMS Rev1**	**193 days**
2	Contract Signing	1 day
3	**SOW (System Requirements definition)**	**15 days**
4	SOW Preparation	2 wks
5	Identify Project Team	0 days
6	SOW Approval	1 wk
7	Approved Schedule	0 days
8	**System Implementation**	**175 days**
9	**HW Procurement/Setup**	**40 days**
10	HW Procurement & Delivery	4 wks
11	Stage Hardware in Test Floor	2 wks
12	Install OS	2 wks
13	**Database Development**	**55 days**
14	Conduct DB definition workshop	5 days
15	Extract existing data	2 wks
16	Adjust/modify GIS importer	2 wks
17	Import and debug DB	4 wks
18	Verify DB results	2 wks
19	Identify and collect missing data	3 wks
20	Complete DB	3 wks
21	Install Database on System	1 wk
22	**System Integration and Test**	**30 days**
23	Project Software Integration	1 wk
24	Install Baseline SW	1 wk
25	Database and Display Integration	1 wk
26	Test Integrated System	1 wk
27	Prepare Test Procedures and Test Plan	1 wk
28	Submit Test Procedures & Test Plan	1 day
29	Review and finalize Test Procedures	1 wk
30	**Pre-FAT**	**25 days**
31	Review Test Plan	1 wk
32	Submit Test Plan	0 days
33	Perform Pre-FAT	3 wks
34	Pre-FAT SPR Resolution	3 wks
35	Pre-FAT Retest	1 wk
36	**FAT**	**35 days**
37	Perform FAT	3 wks
38	FAT SPR Resolution	3 wks
39	FAT Retest	1 wk
40	Receive authorization for Shipment	1 day
41	**Shipment and Installation**	**15 days**
42	Teardown and cleanup	1 wk
43	Shipping, Transp.,	2 wks
44	**Install and Test System**	**35 days**
45	Installation	2 wks
46	Perform SAT	2 wks
47	SAT SPR Resolution	2 wks
48	SAT Retest	5 days
49	System Acceptance	8 hrs
50	**Training Schedule**	**162 days**
51	Network Manager Overview	1 day
52	DMS Network Model Data Engineering Workshop	2 days
53	Database and System Maintenance	2 days
54	DMS System Administration	2 days
55	DMS Applications Operation	2 days



Project: JPSCO
Date: Thu 2/21/13

Task | Split | Milestone | Summary | Project Summary | External Tasks | External MileTask | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | Progress | Split

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Appendix V: Fuel Weights

Schedule B:

FUEL & IPP RATE SUMMARY - January 2013

(To be implemented February 2013)

BILLING EXCHANGE RATE J$94.1377 = US$1.00

	Fuel Weights Applicable				
	Class	Std.	Off Peak	Partial Peak	On Peak
	Rate 10				
L1	1st. 100 kWh	1.000			
L2	Over 100 kWh	1.000			
L3	Rate 20	1.000			
L4	Rate 40 LV	0.960	0.800	1.044	1.302
L5	Rate 40A LV	0.960			
L6	Rate 50 MV	0.960	0.800	1.044	1.302
L7	Rate 60	0.960			
L8	Traffic Signal	0.960			

L9	Actual Fuel & IPP Rate for January 2013 [USc/kWh]	25.443
L10	Billing Exchange Rate for January 2013	94.14

	Fuel & IPP Rates for January 2013				
	Class	Std.	Off Peak	Partial Peak	On Peak
	Rate 10				
L1*L9*L10/100	1st. 100 kWh	23.951			
L2*L9*L10/100	Over 100 kWh	23.951			
L3*L9*L10/100	Rate 20	23.951			
L4*L9*L10/100	Rate 40 LV	22.993	18.394	24.014	29.928
L5*L9*L10/100	Rate 40A LV	22.993			
L6*L9*L10/100	Rate 50 MV	22.993	18.394	24.014	29.928
L7*L9*L10/100	Rate 60	22.993			
L8*L9*L10/100	Traffic Signal	22.993			