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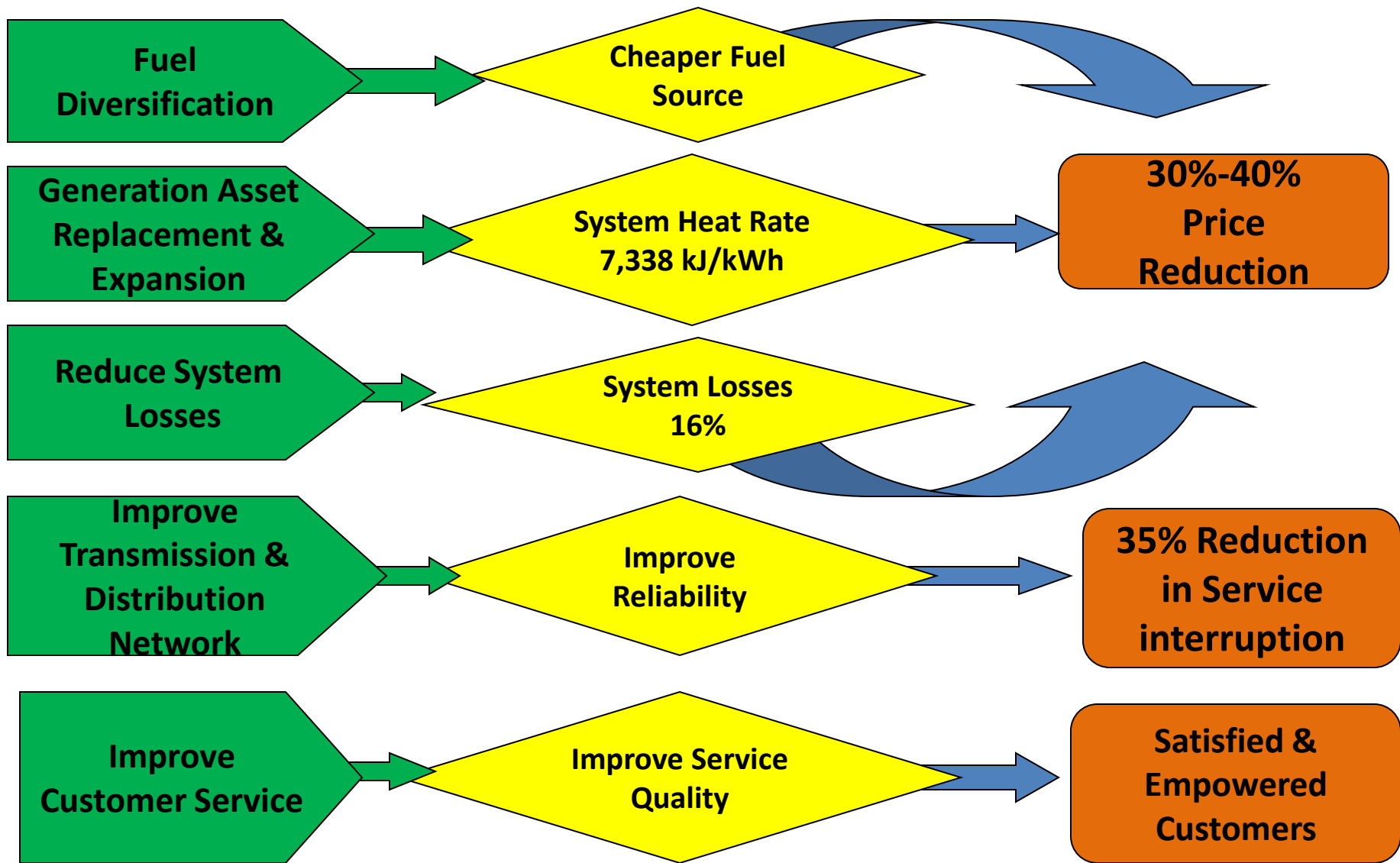
JPS Vision 2016

Delivering Affordable, Reliable and Safe Electricity



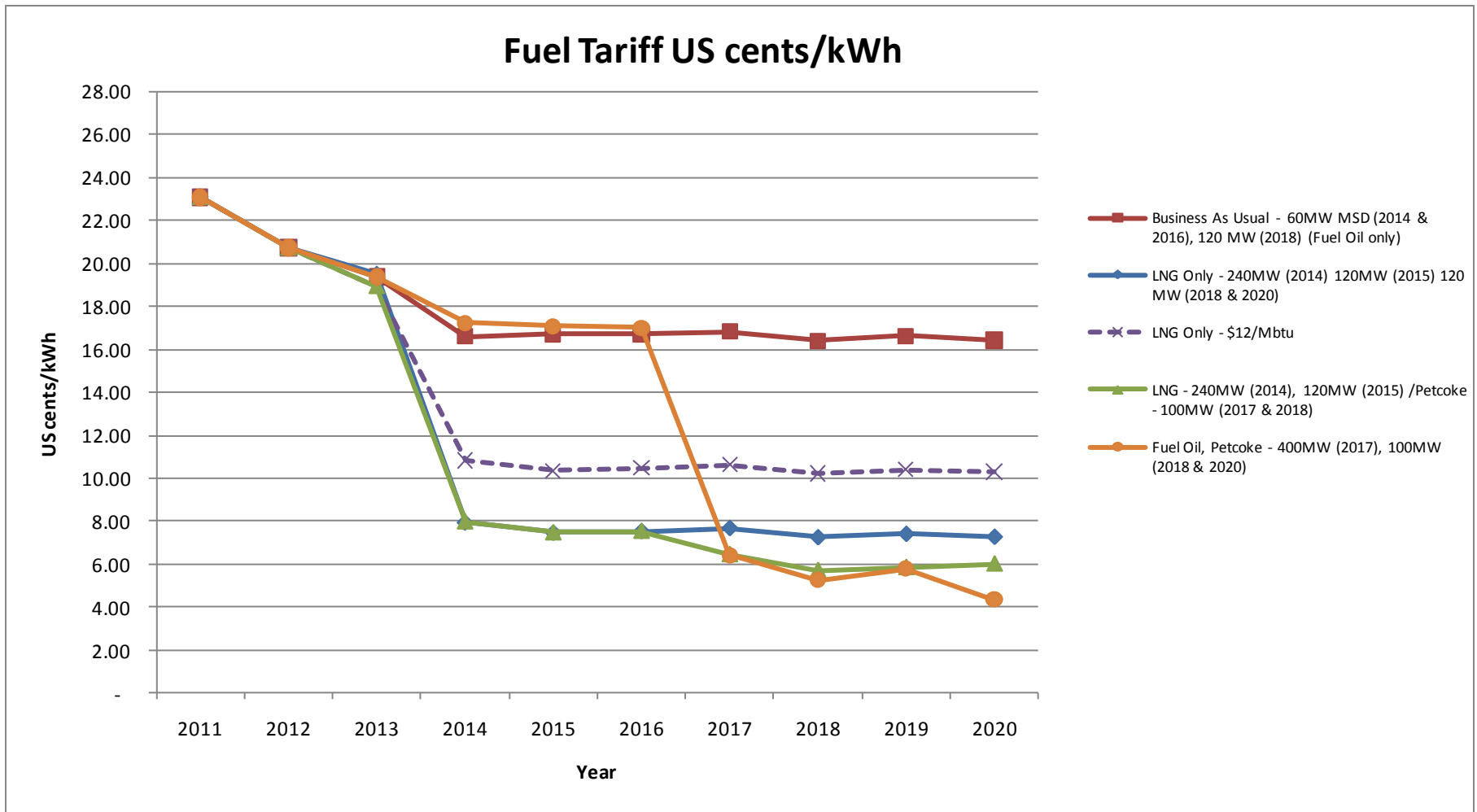
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Presented By: Jamaica Public Service Company Limited , February 2012



Supporting the National Energy policy goal of: “A Modernized and expanded energy infrastructure that produces and delivers safe, reliable, and affordable energy to all consumers on a sustainable basis.”

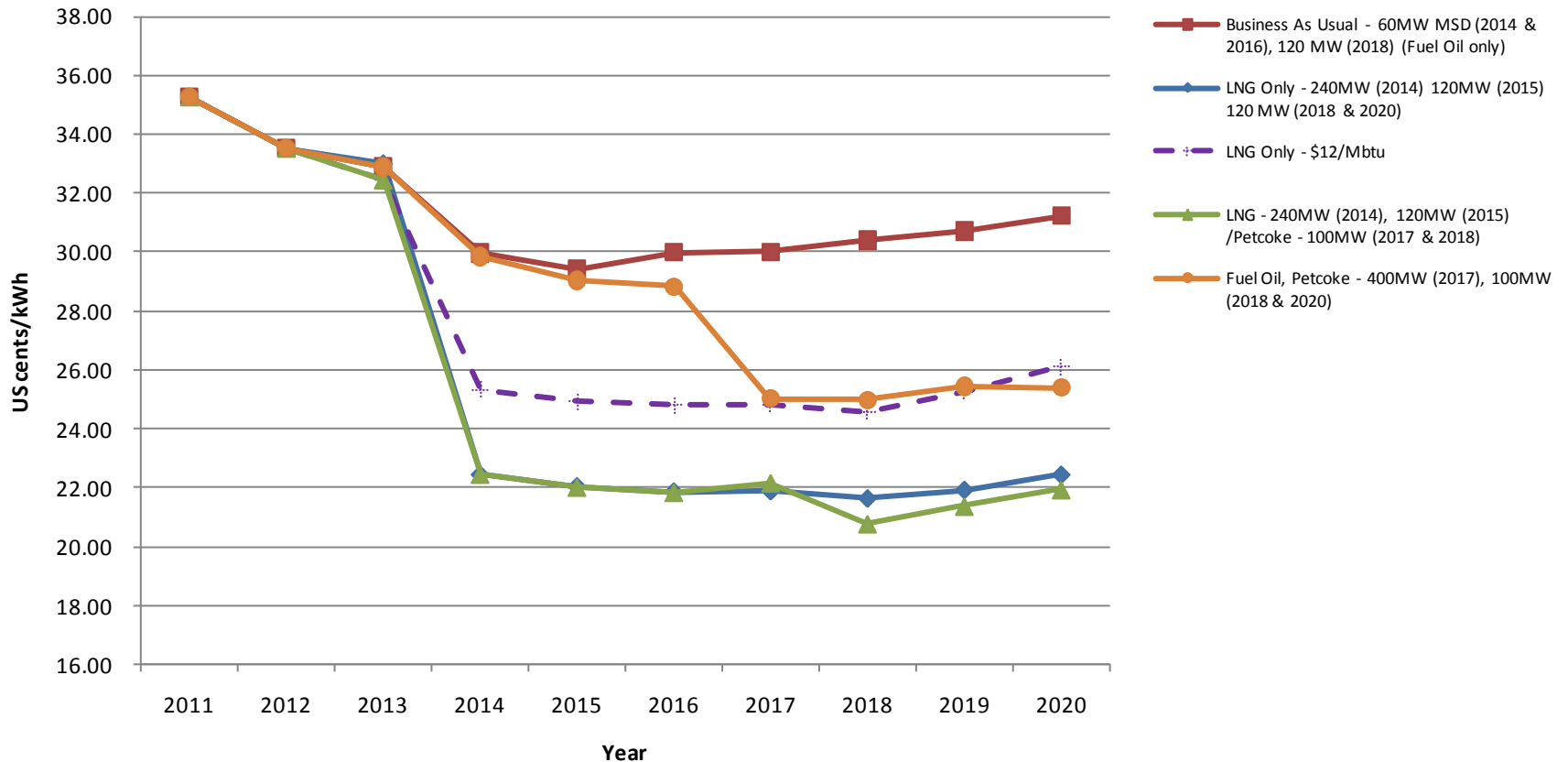
Generation Expansion Scenarios



Petcoke/Coal is the least cost fuel source, however construction duration is 5 years

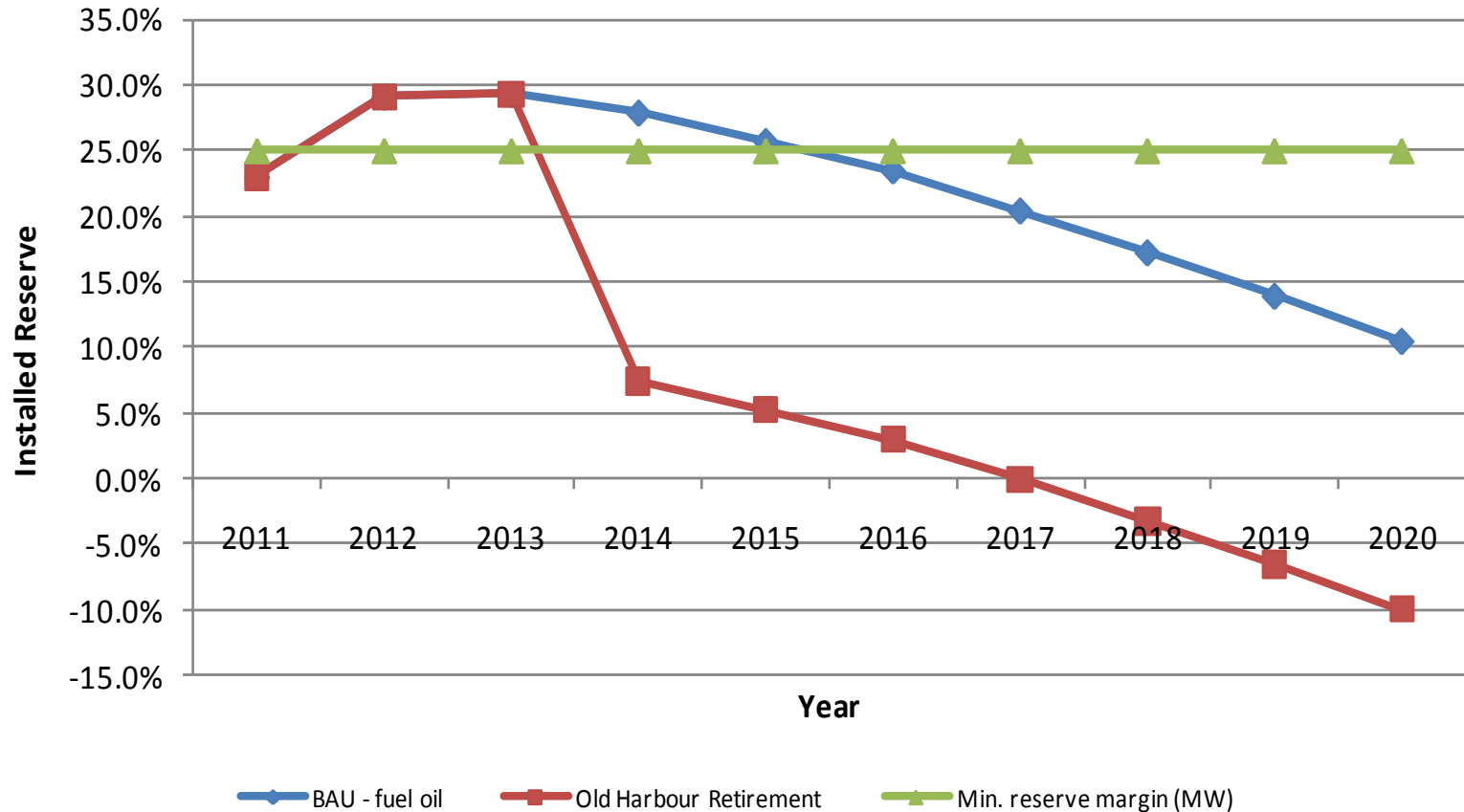
Generation Expansion Scenarios

**Total Average Tariff
(Fuel & Non-fuel excluding GCT)**



All scenarios involving the introduction of a new fuel technology provides significant price advantage versus the Business as usual case.

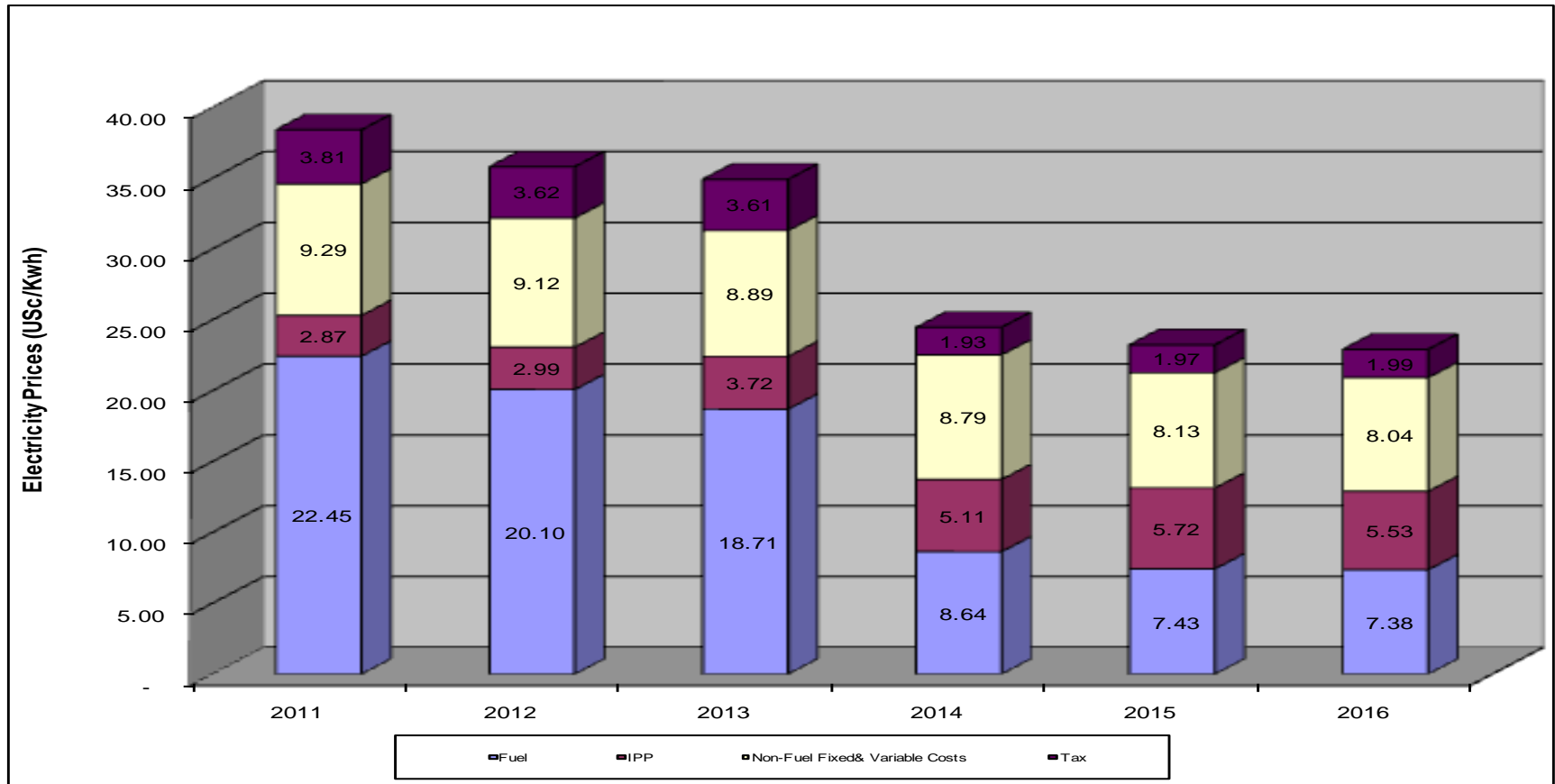
System Reserve Margin No Capacity Addition



The Old Harbour Power Station (223MW) is scheduled for closure in 2014, without significant capacity replacement the system reserve margin will be below the minimum acceptable level.

Electricity Price

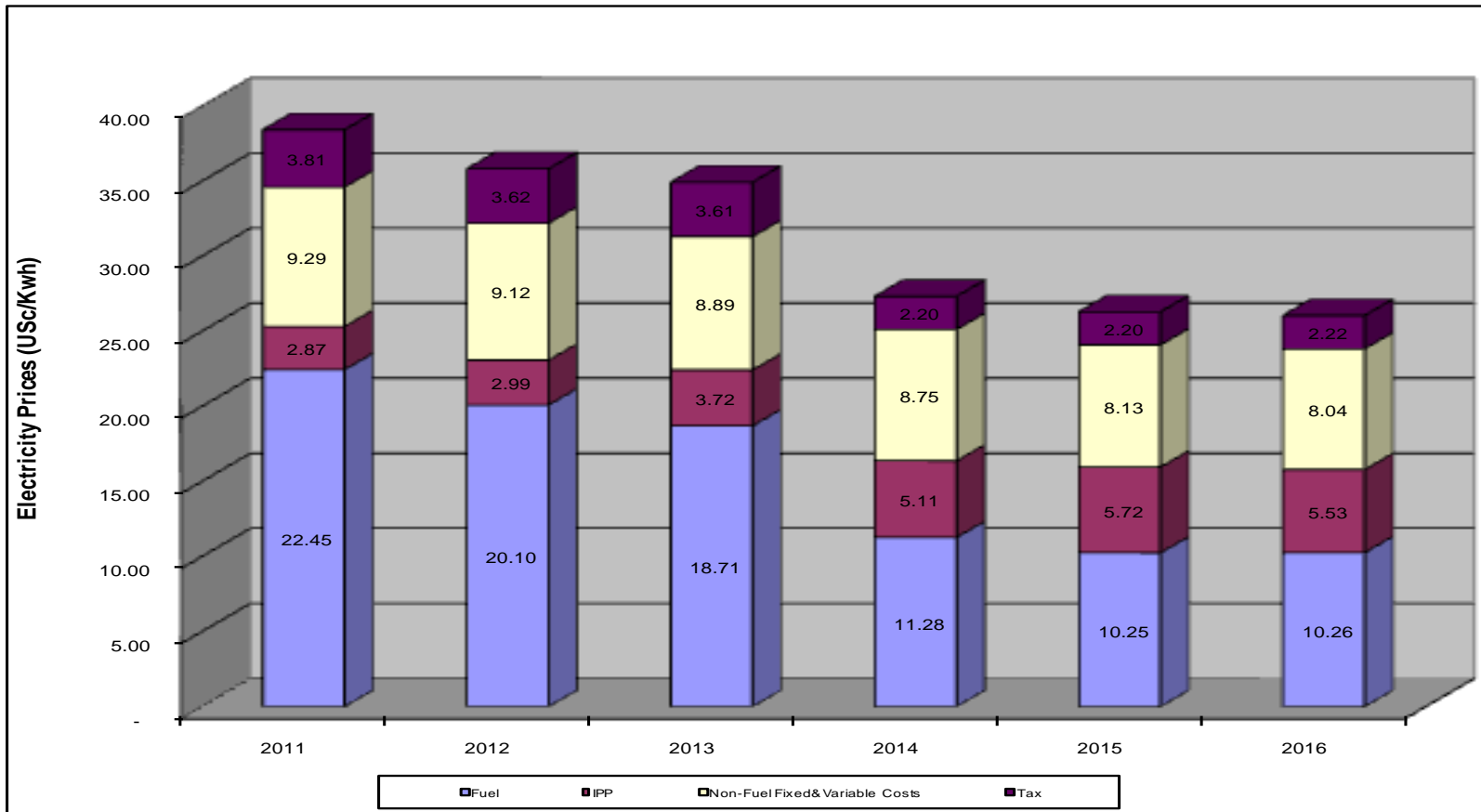
Assumes LNG price of US\$8.50/Mbtu (delivered to generating plant)



**Electricity price is currently US38.4¢/kWh (inclusive of GCT).
JPS envisions a 40% (US15.5¢) reduction by 2016**

Electricity Price

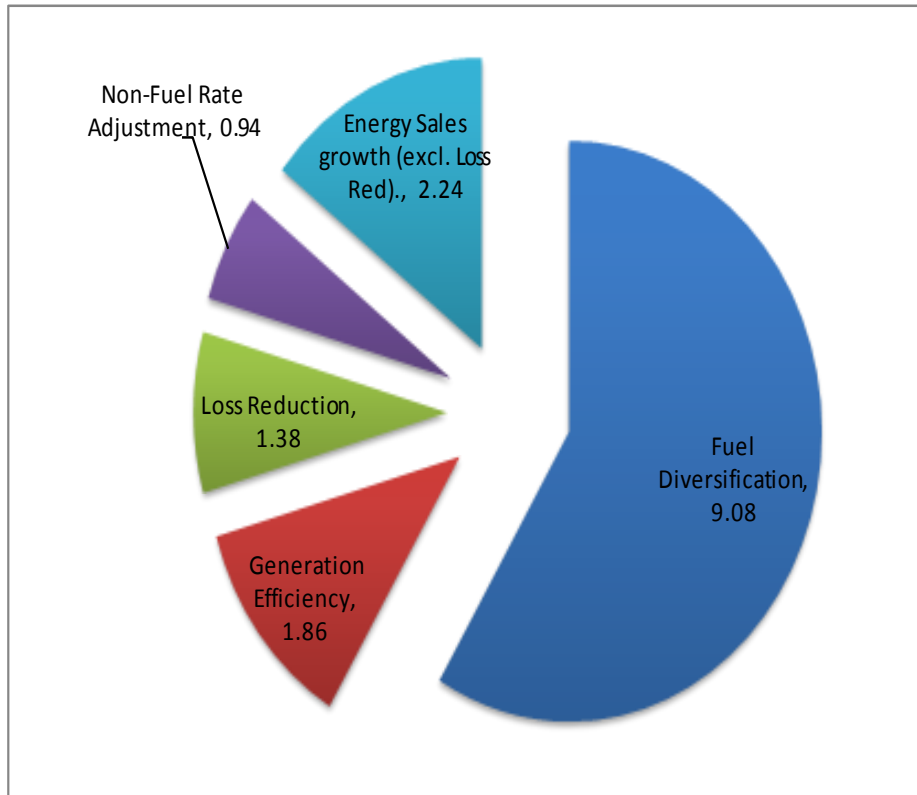
Assumes LNG price of US\$12/Mbtu (delivered to generating plant)



**Electricity price is currently US38.4¢/kWh (inclusive of GCT).
JPS envisions a 32.2% (US12.37¢) reduction by 2016**

Expected Drivers to Electricity Price Reduction

Assumes LNG price of US\$ 8.50/Mbtu (delivered to generating plant)



<u>Price Drivers</u>	Amount US¢/kWh	%
Fuel Diversification	9.08	23.6%
Generation Efficiency	1.86	4.8%
Loss Reduction	1.38	3.6%
Energy Sales growth	2.24	5.8%
Non-Fuel Rate Adjust	0.94	2.5%
	15.49	40.3%

Generation transformation will reduce Electricity price by US10.93¢ (28.4%)

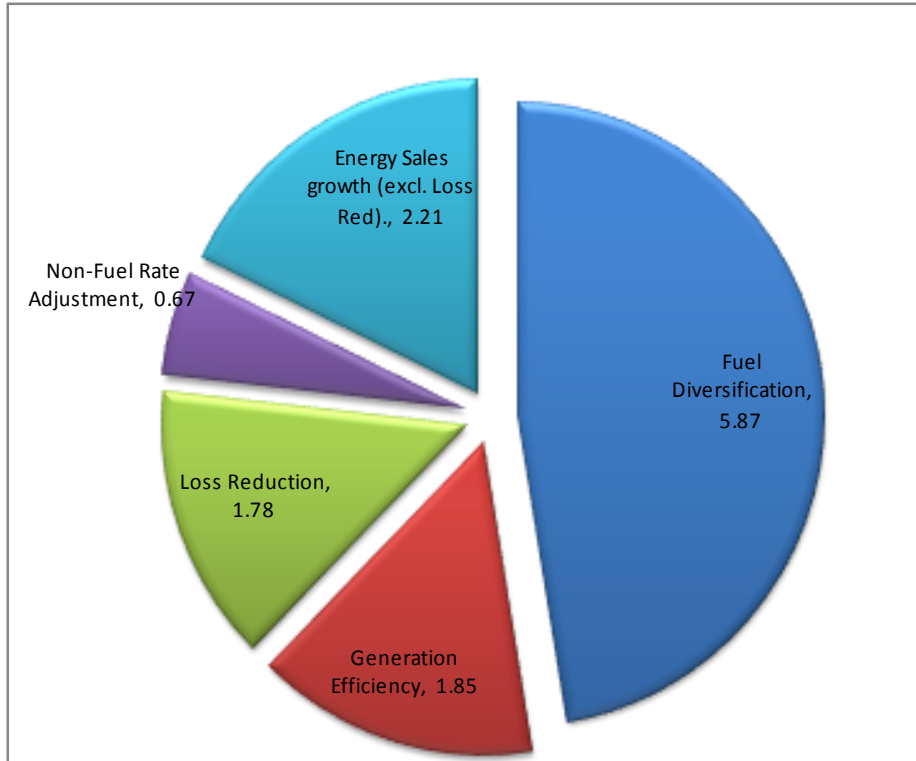
- Through fuel diversification & efficiency improvements from generation plant replacement

Further reduction of US4.56¢ (11.9%) will result from:

- Reduced system Losses (US1.38¢); and
- the impact of Energy sales growth on reducing Avg. fixed cost US2.24¢

Expected Drivers to Electricity Price Reduction

Assumes LNG price of US\$ 12/Mbtu (delivered to generating plant)



<u>Price Drivers</u>	Amount US¢/kWh	%
Fuel Diversification	5.87	15.3%
Generation Efficiency	1.86	4.8%
Loss Reduction	1.78	4.6%
Energy Sales growth	2.21	5.8%
Non-Fuel Rate Adjust	0.66	1.7%
	12.37	32.2%

Generation transformation will reduce Electricity price by US7.73¢ (20.1%)

- Through fuel diversification & efficiency improvements from generation plant replacement

Further reduction of US4.64¢ (12.1%) will result from:

- Reduced system Loss (US1.78¢); and
- the impact of Energy sales growth on reducing Avg. fixed cost US2.21¢

Electricity Generation 2016

Generation replacement, expansion & conversion plan for the period 2012 to 2016, will result in:

- Convert Bogue, JEP 124 & West Kgn power plants to use LNG
- Addition of 360MW of efficient new CCGT plant burning LNG
- Addition of 21MW of Renewables
- System Heat Rate Improvement of 30% to 7,338 kJ/kWh;
- Investment of US\$689 Million.
- Cost of electricity reduces by approximately 36% from 2014 onwards;
- Reduce cost of imported fuel by US\$300M per year from 2014 (JPS fuel cost for 2011 was US\$770M)

Generation Cost Comparison by Technology

Technology	Capital Cost	Plant Size	Heat Rate	Fixed O&M	Var. O&M	All-in-Cost
	(\$/kW)	(Gross-MW)	(Btu/kWh)	US c/kWh	US c/kWh	US c/kWh
CCGT-LNG	1,503	120	7,034	0.72	0.22	10.10
Steam-Petcoke	3,750	100	10,500	0.40	0.52	12.79
HFO-MSD	1,516	60	8,123	0.54	1.63	15.21

Generation System Transformation Plan

Year	Size	Technology	Fuel Type	Site
2014	Convert Bogue CCGT	CCGT	LNG	Bogue
2014	2x 120 MW	CCGT	LNG	Old Harbour
2014	Convert JEP 124MW	MSD	LNG	Old Harbour
	6.3MW	Hydro		Maggotty
	15MW	Wind		Munro
2015	1x 120 MW	CCGT	LNG	Old Harbour
2016	Convert JEP 65MW	MSD	LNG	West Kingston

Assumes LNG price of US\$ 8.50/Mbtu and Petcoke US\$1.87/Mbtu (delivered to generating plant).

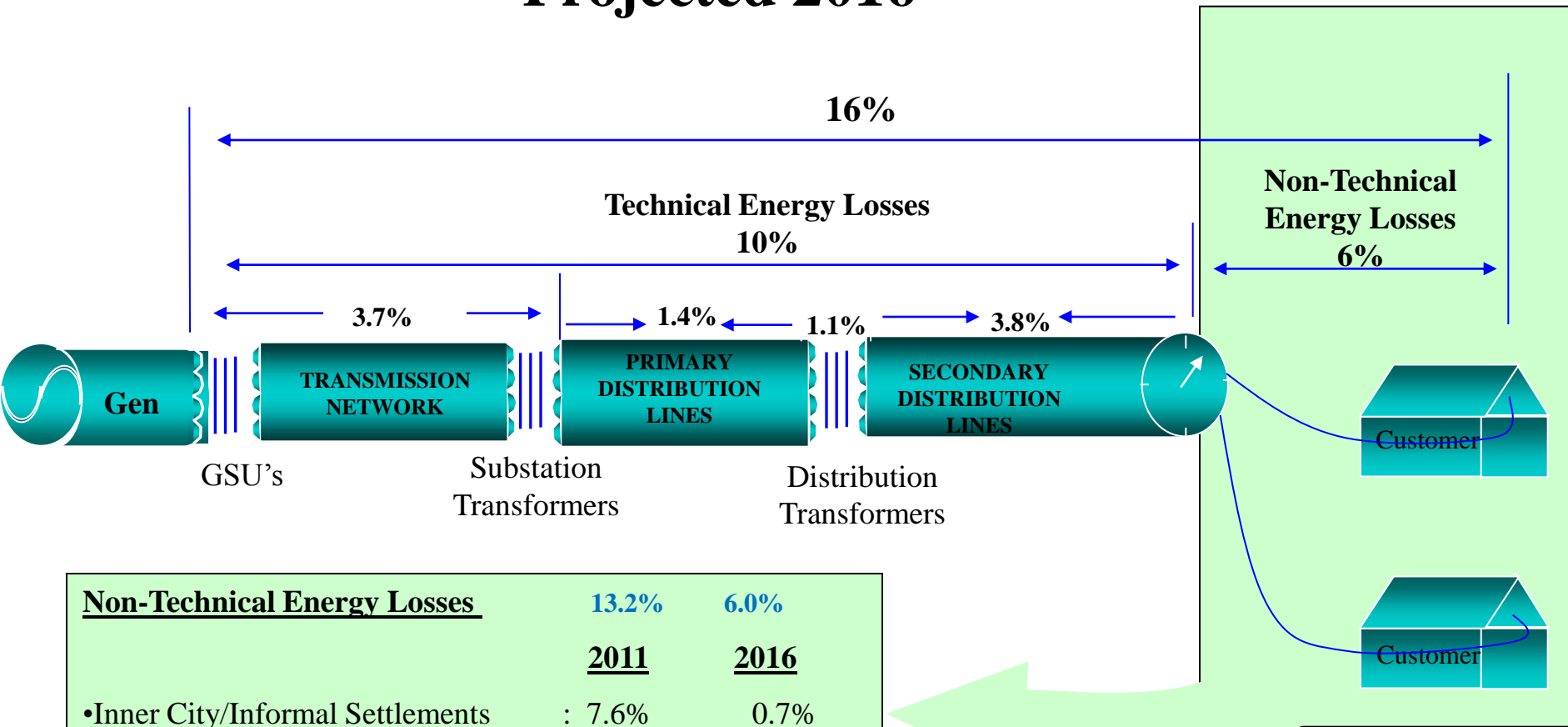
Loss Reduction

- Reduction in System Loss results in:
 - a) Lowering of Fuel Pass through
 - and therefore the final fuel charge incurred by Consumers
 - b) Lower Fuel Costs
 - Due to lower Net Generation
 - c) Non-Technical Loss Recovery
 - will contribute to increase energy sales and a lowering of Avg. Price

	Adjustment	Electricity Price	
	(%tage points)	USc/Kwh	%
Reduction in System Loss Target	4.0%	0.40	1.0%
Fuel Cost Impact	5.0%	0.44	1.1%
Increase in Energy Sales	2.1%	0.54	1.4%
Total		1.38	3.6%

JPS ENERGY LOSS SPECTRUM

Projected 2016



<u>Non-Technical Energy Losses</u>	<u>2011</u>	<u>2016</u>
• Inner City/Informal Settlements	: 7.6%	0.7%
• Residential	: 3.6%	2.6%
• Small Commercial	: 1.6%	2.6%
• Priority C&I Customers (6,000)	: 0.2%	0.1%

Reduction in Non-Technical Losses from 13.2% to 6% by 2016 .

Investments

US\$'000						
	2012	2013	2014	2015	2016	Total 2012-16
Generation Transformation : CCNG	90,947	325,884	186,227	-	-	603,058
Generation Transformation : Petcoke	2,000	5,000	78,000	144,000	246,000	475,000
Renewables Generation	8,825	27,310	36,428	-	-	72,563
Generation Conversion	-	7,447	5,582	-	-	13,029
Generation Maintenance	19,598	15,450	10,117	8,564	7,778	61,506
Transmission Expansion	900	3,900	2,800	2,400	12,288	22,288
Transmission Mtce & Upgrading	7,598	7,389	5,114	4,847	7,762	32,711
Distribution Mtce & Expansion	14,945	17,972	20,215	18,275	16,993	88,401
Loss Reduction	19,579	23,110	20,648	15,874	9,431	88,641
Heath, Security Safety & Environ.	2,000	500	500	500	500	4,000
Information Techn & Other Support	8,542	7,568	8,158	6,457	6,037	36,763
	174,934	441,530	373,788	200,917	306,790	1,497,958

- JPS will invest US\$1.5B between 2012 and 2016 to upgrade and transform the Electricity service including:
 - Plant Construction & Conversion for LNG **\$616M**
 - Constructing 21MW of Renewables capacity **\$73M**
 - Petcoke 100MW (2017/2018) **\$475M (est.)**
 - T&D Network Expansion and Upgrade **\$143M**
 - Reducing Systems Losses **\$89M**