

BEFORE THE GUAM PUBLIC UTILITIES COMMISSION

IN THE MATTER OF:) GPA Docket 16-08
)
The Petition of the Guam Power Authority)
for Approval of Procurement to Continue) **PUC COUNSEL REPORT**
with the Conversion and Installation of)
Energy Efficient LED Streetlights)
_____)

INTRODUCTION

1. This matter comes before the Guam Public Utilities Commission [“PUC”] upon the Petition of the Guam Power Authority [“GPA”] for Approval of Procurement to Continue with the Conversion and Installation of Energy Efficient LED Streetlights.¹

BACKGROUND

2. In February 2015, the Guam Consolidated Commission on Utilities approved a program to replace high pressure sodium streetlights around the island with light emitting diode (LED) streetlights. The purpose of the conversion to LED lighting is to conserve energy and save on annual maintenance and fuel costs in an estimated amount of \$1M annually.²
3. At present GPA has an existing indefinite quantity contract with JMI Edison for the supply of 150W and 250W equivalent to LED luminaires, which contract will expire in September 2016.³
4. To date GPA has converted approximately 4,886 total HPS streetlights to LED.⁴
5. CCU authorized GPA to proceed with the LED Streetlight Replacement program and to procure LED luminaires for Fiscal Year 2016 at a cost not to exceed \$500,000.⁵

¹ GPA Petition for Approval of Procurement to Continue with the Conversion and Installation of Energy Efficient LED Streetlights, GPA Docket 16-08, dated May 20, 2016.

² Guam Consolidated Commission on Utilities Resolution 2015-05, Relative to LED Lights, adopted February 24, 2015.

³ Guam Consolidated Commission on Utilities Resolution No. 2016-21, Authorizing the Guam Power Authority (GPA) to Continue with the Conversion and Installation of Energy Efficient LED Streetlights, adopted April 26, 2016.

⁴ Id. at p. 1.

⁵ Id. at p. 2.

6. In its current Petition, GPA seeks to procure additional LED lights. There are plans to convert the remaining 10,133 streetlights from HPS to LED. The projected cost for material and installation is \$2,792,037.71.⁶
7. The full implementation of the LED Streetlight Replacement program is estimated to reduce annual maintenance cost by approximately \$400,000.⁷
8. GPA also plans to install the LED lights through in-house labor. The installation cost per unit in-house is \$53.54, whereas the estimated contractor cost for installation per unit is \$200.⁸
9. GPA has installed, and maintains, a total of 16,862 streetlights, which provide illumination of the roadways, vehicles, and pedestrians at night and safeguard and facilitate vehicular and pedestrian traffic.⁹
10. GPA will replace the remaining approximately 10,130 HPS streetlights with LED streetlights for a total project cost of \$2,792,100, which is comprised of \$2,249,500 in materials cost and approximately \$542,500 in GPA in-house labor and equipment costs.¹⁰
11. The Remaining Conversion Costs are set forth in Exhibit "A", attached hereto.¹¹

ANALYSIS

12. GPA intends to fund the remainder of the LED Streetlight Replacement Program in the General Plant CIP Budget.¹²
13. GPA plans to budget the total project cost of \$2,792,037.71 in its FY2017 General Plant Budget.¹³

⁶ GPA Issues for Decision on Resolution No. 2016-31, for GPA Work Session, May 19, 2016.

⁷ Id.

⁸ Id.

⁹ Guam Consolidated Commission on Utilities, Resolution No. 2016-31, Authorizing the Guam Power Authority [GPA] to Continue and Complete the Conversion and Installation of Energy Efficient LED Streetlights, adopted May 24, 2016.

¹⁰ Id. at p. 2.

¹¹ GPA Issues for Decision, for GPA Work Session, dated May 19, 2016.

¹² Id. at p. 2.

¹³ Id.

14. GPA's Cost-Benefit Analysis is attached hereto as Exhibit "B". It indicates that the program will pay for itself in 5.07 years.¹⁴
15. Every year GPA submits a Capital Improvement Project Ceiling Cap. This cap includes General Plant Engineering projects. Over the past five fiscal years, the CIP Project Ceiling Cap has ranged from \$5M to \$16,390,707.¹⁵
16. GPA could permissibly include the LED Streetlight Conversion Project costs in its FY2017 Capital Improvement Project Cap under "General Plant".¹⁶
17. The procurement of streetlights for the continued implementation of the LED Streetlight Replacement Program will reduce costs and improve operations and maintenance. The LED streetlights generally have a longer useful life than the HPS streetlights; the LED streetlight implementation will reduce both fuel and maintenance costs.

RECOMMENDATION

18. Counsel recommends that the PUC approve the GPA's procurement of LED Streetlights for the continued conversion and installation of energy efficient LED streetlights.
19. A Proposed Order is submitted herewith for the consideration of the Commissioners.

Dated this 20th day of May, 2016.

Frederick J. Horecky
PUC Legal Counsel

¹⁴ LED Streetlight Replacement Program, Benefit Cost Analysis starting October 1, 2016.

¹⁵ PUC Order, GPA Docket 15-19, dated September 24, 2015 at p. 1.

¹⁶ GPA Counsel Graham Botha indicated in a conversion with PUC Counsel Horecky on May 20, 2016, that GPA intends to place these project costs on General Plant in the CIP Project Cap so that the costs can be amortized and depreciated as a Capital Improvement Project. The LED streetlights will be booked as a long term capital asset.

REMAINING CONVERSION
Total Streetlight Count Less ARRA Installations and T&D Installations

GPA In-House							
Item	Description	Qty	Material Unit	Material Cost	Installation Unit	Installation Cost	Cost
1	150HPS Equivalent	9,121	\$220.00	\$2,006,620.00	\$53.54	\$488,353.54	\$2,494,973.54
2	250HPS Equivalent	1,012	\$240.00	\$242,880.00	\$53.54	\$54,184.17	\$297,064.17
	Total:	10,133		\$2,249,500.00		\$542,537.71	\$2,792,037.71
Contractor Cost (labor/equipment)							
Item	Description	Qty	Material Unit	Material Cost	Installation Unit	Installation Cost	Cost
1	150HPS Equivalent	9,121	\$220.00	\$2,006,620.00	\$200	\$1,824,200.00	\$3,830,820.00
2	250HPS Equivalent	1,012	\$240.00	\$242,880.00	\$200	\$202,400.00	\$445,280.00
	Total:	10,133		\$2,249,500.00		\$2,026,600.00	\$4,276,100.00

LED Streetlight Replacement Program Benefit Cost Analysis Starting October 1, 2016

Assumptions	
Average Run Time Per Day(Hours)	12
Interest Rate	7.00%
Cost Per kWh (Dollars) LEAC Rate as of 5/10/2016	\$ 0.0866
Useful Life (years)	12
HPS Street Light Failure Rate	27%
150W HPS kWh/Year (180W X 12hrs X 365) / 1000	7,190,988
250W HPS kWh/Year (250W X 12hrs X 365) / 1000	1,285,442
HPS kWh usage per Year	8,476,439

LED Total Cost and kW Load						
Description	# of Units	Wattage	Installation Cost	Unit Cost	Total Cost	Total kW
150W HPS Replacement LED	9121	80	\$ 53.54	\$ 220.00	\$ 2,484,973.54	729.68
250W HPS Replacement LED	1012	119	\$ 53.54	\$ 240.00	\$ 287,064.17	120.43
	10133			TOTAL Project cost	\$ 2,792,037.71	850.11
				LED kWh Usage per Year		3,723,473
				kWh Savings Per Year		4,752,966

YEAR	ENERGY SAVINGS (@ \$0.0866/kWh)	MAINTENANCE SAVINGS	Total annual benefits	Annual Benefit Flow	Cumulative Benefit Flow	Payback in Years
0				\$ (2,792,037.71)	\$ (2,792,037.71)	-
1	\$ 411,688.62	\$ 274,572.69	\$ 686,241.31	\$ 686,241.31	(2,105,796.39)	5.07
2	\$ 411,688.62	\$ 274,572.69	\$ 686,241.31	\$ 686,241.31	(1,419,555.08)	5.07
3	\$ 411,688.62	\$ 274,572.69	\$ 686,241.31	\$ 686,241.31	(733,313.77)	5.07
4	\$ 411,688.62	\$ 274,572.69	\$ 686,241.31	\$ 686,241.31	(47,072.45)	5.07
5	\$ 411,688.62	\$ 274,572.69	\$ 686,241.31	\$ 686,241.31	639,168.86	5.07
6	\$ 411,688.62	\$ 274,572.69	\$ 686,241.31	\$ 686,241.31	1,325,410.17	5.07
7	\$ 411,688.62	\$ 274,572.69	\$ 686,241.31	\$ 686,241.31	2,011,651.49	5.07
8	\$ 411,688.62	\$ 274,572.69	\$ 686,241.31	\$ 686,241.31	2,697,892.80	5.07
9	\$ 411,688.62	\$ 274,572.69	\$ 686,241.31	\$ 686,241.31	3,384,134.11	5.07
10	\$ 411,688.62	\$ 274,572.69	\$ 686,241.31	\$ 686,241.31	4,070,375.43	5.07
11	\$ 411,688.62	\$ 274,572.69	\$ 686,241.31	\$ 686,241.31	4,756,616.74	5.07
12	\$ 411,688.62	\$ 274,572.69	\$ 686,241.31	\$ 686,241.31	5,442,858.05	5.07

Benefit Cost Ratio (Net Present Value of Cumulative Annual Benefits / Initial Cost)	1.95
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