
**BEFORE THE GUAM PUBLIC UTILITIES COMMISSION**

| | | |
|---|---|---|
| IN THE MATTER OF: | ) | GPA Docket 25-12 |
| | ) | |
| AMENDMENT TO UKUDU POWER PLANT ENERGY CONVERSION AGREEMENT | ) | **ALJ REPORT** |

## INTRODUCTION

This matter comes before the Guam Public Utilities Commission ["PUC"] for approval of GPA's request to amend the Energy Conversion Agreement (ECA) between GPA and Guam Ukudu Power LLP (GUP), to allow GPA to pay for additional pre-commissioning testing which will result in additional energy support services from Ukudu power plant.[1]

## BACKGROUND

GPA entered into an ECA with GUP in November 2019. The ECA has been amended and restated a number of times, and the version currently in effect is the "Third Amended and Restated ECA."[2] Article 3.2.2 of the ECA provides: "Prior to the Commercial Operation Date, GPA shall not pay for energy delivered to GPA during Testing and Commissioning." GPA seeks to amend the ECA so that it can purchase additional testing power from GUP prior to the plant's commercial operation date.

[1] GPA Petition to approve GPA's Request to Amend the Energy Conversion Agreement and to pay for Additional Pre-Commissioning Testing, GPA Docket 25-12.
[2] Id. at p. 1.

Recently, the Ukudu Power Plant has been undergoing testing and commissioning activities, with the expected Commercial Operation Date in September 2025.[3] The Ukudu power plant has successfully tested up to 145MW gross power through its simple cycle process and will be testing the steam turbine for combined cycle operations for its contracted capacity of 198MW in the coming months.[4]

Since 2024, GPA's average power demand has seen an increase of about 10MW, reaching its highest demand since Typhoon Mawar at 259MW on April 21, 2025. GPA further indicates that the peak demand has now reached 265MW.[5] At the same time, several plants are currently undergoing long-needed overhauls in repairs while others were experiencing unscheduled outages.[6] Piti 8 was down for over a week.

GPA submits that the additional energy produced by Ukudu testing has had the effect of mitigating the risk of load shedding by providing supplemental energy at a time of high demand. Customer demand, based on historical trends, is expected to rise still higher this summer as temperatures increase.[7] In order to avoid the possibility of load shedding as demand increases, GPA proposes the purchase from GUP of additional power generated by the testing of the Ukudu plant.

GPA and GUP have negotiated a draft Amendment No. 1 to the Third Amended and Restated Energy Conversion Agreement which would enable GPA to purchase test

[3] GPA Petition, Exhibit B, at p. 1; GPA Resolution No. FY2025-16, Authorizing the Guam Power Authority (GPA) to Receive Additional Pre-Commissioning Energy Support Services from Ukudu Power Plant, adopted and approved on April 22, 2025.
[4] Id.
[5] Conference between PUC ALJ Fred Horecky and GPA Counsel Marianne Woloschuk, CFO John Kim, and AGMO Jennifer Sablan on May 16, 2025; see also "Historical Peak Demand (MW) chart", GPA Petition, Exhibit B, at p. 7.
[6] GPA Petition at p. 2.
[7] Id.

energy generated during the additional testing hours, to set the terms for the purchase of power delivered to GPA during the additional testing hours, and to pay the costs associated therewith.[8]

The expected power output between May 30, 2025, and September 6, 2025, would be 135MW.[9] The parties have now updated the agreed proposal to indicate that there will be 135 combined cycle capacity for 15 hours/day for a minimum of 65 days.[10]

The updated GPA Ukudu Cost Agreement Analysis indicates that GPA will pay GUP for the additional testing power in the approximate amount of $4.9M. However, GPA contends that these costs will be offset by approximately $9.2M in savings from energy produced by the more efficient new power plant, resulting in a net savings of approximately $4,371,745.[11] In order to accomplish the additional testing, and to allow GPA to pay for additional testing during Ukudu's pre-commissioning, GPA requires an amendment to the ECA that will allow GPA to pay for additional testing during the Ukudu pre-commissioning period.

For a more detailed explanation of the cost breakdown, please see GPA Responses to Requests for Information attached hereto as Exhibit "2".[12]

The terms and conditions for the purchasing of such additional testing power are set forth in Schedule 3-1 Additional Testing Hours.[13] There are also provisions for

[8] GPA Petition at Exhibit A, p. 1 (Amendment No. 1 to Third Amended and Restated Energy Conversion Agreement).
[9] GPA Petition at Exhibit A, pgs. 5-6 (Schedule 3.1, Additional Testing Hours).
[10] Ukudu Cost Agreement Analysis, submitted by GPA to ALJ Horecky on May 21, 2025, a true and correct copy of which is attached hereto as Exhibit "1".
[11] Id. at Exhibit "1".
[12] GPA provided the ALJ with Responses to RFIs by email dated May 21, 2025.

extending the initial term and providing for an extended term whereby GPA could continue to purchase additional testing power beyond September 6, 2025, until the COD.[14]

In GPA Resolution No. FY2025-16, the Guam Consolidated Commission on Utilities authorized GPA to compensate GUP for additional generation in an amount up to $4.9M for the operation cost of the Ukudu power plant prior to the commercial operation date.[15] GPA petitions the PUC to cover the cost of these services under the Levelized Energy Adjustment Clause (LEAC) because of the direct fuel savings.[16]

Since the aforementioned CCU Resolution did not request an amendment of the ECA to allow GPA to purchase energy during the testing period, GPA intends to ask the CCU to amend Resolution No. FY2025-16 at its May 27, 2025 meeting, to allow the GPA General Manager to petition the PUC to amend the ECA and allow GPA to pay for $4.9M of additional testing energy in the pre-commissioning period.[17]

## ANALYSIS

### I. GPA's Contract Review Protocol.

[13] GPA Petition at Exhibit A, pgs. 5-6 (Schedule 3.1, Additional Testing Hours).
[14] Id.
[15] GPA Resolution No. FY2025-16, Authorizing the Guam Power Authority (GPA) to Receive Additional Pre-Commissioning Energy Support Services from Ukudu Power Plant, adopted and approved on April 22, 2025, GPA Petition at Exhibit B, p. 2.
[16] Id.
[17] GPA Petition at p. 3.

The GPA Contract Review Protocol requires that the PUC must review "any contract or obligation... which exceeds $1,500,000."[18] Since the estimated cost for the purchase of additional testing power by GPA is approximately $4.9M, prior PUC review and approval is required. GPA recognizes that prior PUC approval is required in Section F of Amendment No. 1 to Third Amended and Restated Energy Conversion Agreement.

## II. GPA has justified the need for the purchase of additional testing power from GUP.

There has been an increase in Peak Demand to 265MW in May 2025.[19] Prior peak demand for the months of May in 2023 and 2024 were 257MW and 252MW respectively. The increase in peak demand places additional load burdens upon the IWPS. GPA has established a standard that it should have sufficient generation capacity to survive an outage of its two largest available units. GPA's calculation indicates that it could fall 44MW short in capacity without the additional power produced by the Ukudu plant.[20] With the minimum additional capacity of over 131,625,000 kWh from the additional test power, GPA should have sufficient power to prevent any undercapacity load imbalance.

On May 2, 2025, GPA issued a public notice indicating that the implementation of a rotating outage schedule was possible to address "an elevated risk of load shedding as key units are offline for necessary preventative maintenance or limited in capacity production and summer heat rises." In the Notice, GPA indicated that it would file a

[18] Contract Review Protocol for Guam Power Authority, Administrative Docket, dated February 15, 2007, at par. 1.
[19] GPA Petition at Exhibit B, p. 8.
[20] GPA Petition at Exhibit B, p. 8.

petition before the PUC for "additional testing energy support from the Ukudu power plant during the peak summer months."[21]

In its May 15, 2025, release ("GPA requests the Community to Conserve Power During Peak Hours"), GPA again asked customers to conserve power during the evening hours. It indicated that "GPA faces an increased risk of rotating outage as Baseload Unit Piti #8 remains offline for necessary engine overhaul or when other units operate at limited capacity."[22] Extended load shedding would present undesirable consequences for the people of Guam. GPA has proposed a reasonable and necessary plan to mitigate the potential of load shedding, which plan should prevent the harms that would result to customers.

## III. GPA has presented a credible case that its plan to purchase additional testing power will produce cost savings for the ratepayers.

Even were there no cost savings from GPA's plan to purchase additional testing power, it could be argued that the cost for such power is justified in order to prevent ongoing load shedding. The additional power serves a bridge to protect customers until the Ukudu plant comes fully on line. It may be difficult to estimate the actual savings. The exact amount of power that will be purchased is unknown, and fuel prices could fluctuate. Also, there could be deviations in the guaranteed heat rate. Nevertheless, GPA has presented a plausible and reasoned argument that its plan to purchase additional testing power will produce cost savings for the ratepayers.

[21] "GPA Continues to Urge Residents to Shift Peak Usage", GPA Communications Release dated May 2, 2025.
[22] GPA Press Release, GPA requests the Community to Conserve Power During Peak Hours, dated May 15, 2025.

GPA's case to demonstrate cost savings from its plan is set forth in the updated GPA Ukudu Cost Agreement Analysis (Exhibit "1").[23] GPA estimates that the total cost per kWh for the additional power generated purchased from the Ukudu plant is $0.1596. However, the production cost for the existing system without the Ukudu plant is $0.1883 (existing system fuel). Thus, the power produced by Ukudu is $0.0288 per kWh less than the production cost for the existing system without Ukudu. Based upon a minimum kWh purchase of 131,625,000, GPA estimates that there will be savings from the purchase of the additional testing power from Ukudu in the amount of $4,371,745. The reason for the variance is that the thermal efficiency of the Ukudu plant is far greater than for the existing system, and the Ukudu plant burns less fuel. The guaranteed BTU/kWh for Ukudu is 6,694; for the existing system BTU/kWh is likely over 12,000.[24]

GPA agrees to supply the fuel required for the operation of the Ukudu plant for the testing period at no additional cost to GUP. GUP agrees to deliver to GPA, and GPA agrees to receive all the power generated during the Additional Testing Hours. GUP agrees to deliver at least sixty-five (65) days of power from the agreed commencement date of the Initial Term.[25]

## RECOMMENDATION

Based upon the documentation provided by GPA, the ALJ recommends that the PUC approve GPA's request to amend the ECA between GPA and GUP, and allow GPA to

[23] Ukudu Cost Agreement Analysis, Exhibit "1".
[24] GPA Petition at Exhibit B, p. 6 (Production Cost Ukudu 135MW Combustion Cycle and Production Cost Existing System without Ukudu); Conference between PUC ALJ Fred Horecky and GPA Counsel Marianne Woloschuk, CFO John Kim, and AGMO Jennifer Sablan on May 16, 2025.
[25] Exhibit "1".

pay for the additional pre-commissioning testing which would result in additional energy support services from the Ukudu power plant.

A proposed Order approving such recommendations is submitted herewith for the consideration of the Commissioners.

Respectfully submitted this 22nd day of May, 2025.

Sincerely,

Frederick J. Horecky
Chief Administrative Law Judge

Copy of Attachment 2 - Cost Analysis for Ukudu Additional Energy Support
Revised Period

**Revised Proposal for 65 days**

| | | | | |
|---|---|---|---|---|
| **Plant Mode:** | **Combined Cycle** | | | |
| Capacity (KW) (2ea. Combined cycle units) | 135,000 | A | | |
| Hours/Day | 15 | B | | |
| Total Days | 65 | C | | |
| Total KWH | 131,625,000 | D | D= A x B x C | |
| FOMC (Fixed for Period) | $ 4,600,000 | E | *Ukudu Proposal* | |
| VOMC | $ 300,000 | F | *Ukudu Proposal (Based on $0.002/KWH)* | |
| Total Cost: | $ 4,900,000 | G | G= E + F | |
| $/Kwh | $ 0.0372 | H | G / D | |

| **UKUDU Agreement Cost:** | **Combined Cycle Mode** | | |
|---|---|---|---|
| Combined Cycle Thermal Efficiency (%) | 51.3% | I | *Per ECA Schedule 4 Table* |
| Guaranteed BTU/KWH | 6,694 | J | *Per ECA Schedule 4 Table* |
| Guaranteed Contingency 5% | 7,046 | K | K = J / 0.95 |
| ULSD BTU/Gal. | 137,143 | L | *Average Fuel Heating Value from Fuel Supplied* |
| KWH/Gal ULSD | 19.46 | M | M= L / K |
| ULSD $/Bbl | $100.00 | N | *Assumed Fuel Cost* |
| ULSD $/Gal. | $2.3810 | O | O = N / 42 |
| $/Kwh Fuel Cost | $0.1223 | P | P = O / M |
| Agreement Cost $/kwh | $0.0372 | Q | Q = H |
| Total Ukudu Cost/KWH | $0.1596 | R | R = P + Q |

**Existing System Fuel Cost without Ukudu:**

| | | | |
|---|---|---|---|
| GPA Net kwh/gal | 13.4 | S | *Average GPA system fuel efficiency* |
| LSRFO/ULSD $/Bbl. | $106.00 | T | *Average GPA fuel Cost >>(115*.4+100*.6)* |
| LSRFO/ULSD $/Gal | $2.5238 | U | U= T / 42 |
| Existing System Fuel $/KWH | $0.1883 | V | V = U / S |

| | | | |
|---|---|---|---|
| Ukudu Variance/KWH (Savings) | ($0.0288) | W | W = R - V |
| Min. KWH Production | 151,875,000 | X | X = D |
| Minimum Fuel Cost (Savings) for Ratepayers | ($4,371,745) | Y | Y = W x X |

EXHIBIT "1"

GPA Response to PUC RFI
GPA Docket 25-12

1. Please provide a copy of the current Article 3.2.2 of the ECA.

   **GPA Response:** Attachment 1 (PDF) includes the current Article 3.2.2. of the ECA which was previously provided by GPA Legal Counsel on May 15.

2. Provide all documents, spreadsheets, calculations, or other materials in the possession of GPA which explain or demonstrate cost savings alleged of $5,125,591, and provide a written explanation.

   **GPA Response:** Attachment 2 (Excel File) "Initial Proposal" worksheet shows the calculation for the presentation slide Exhibit B Pages 5 & 6 of the GPA petition. The Excel file shows this is a simplified calculation based on an average GPA fuel efficiency (KWH/gal) and a projected fuel efficiency for Ukudu with average fuel costs ($/gal). The following explains the different parts of the spreadsheet:

   - **Proposal for 75 days (Exhibit B Page 5)**

   GUP had proposed within 115 days they will operate the Ukudu Power Plant for additional 15 hours from 60-135 MW. Within this period Ukudu had committed that 75 days will be at 135 MW, combined cycle operation with high fuel efficiency. This required a Fixed O&M Charge (FOMC) of $4.9M for the entire period and a Variable O&M Charge (VOMC) of $0.002 per energy (kwh) produced. At 75 operating days dispatched at 135MW Ukudu could offset over 151,000,000 kwh of energy production from less efficient GPA units. The calculated costs for FOMC and VOMC totaled nearly $4.9M. This amount divided by the Ukudu energy produced is an average Ukudu cost of $0.0323/KWH.

   - **Production Cost for Ukudu 135MW Combined Cycle (Exhibit B Page 6):**

   Guam Ukudu Power has indicated that they expect the unit to run near the guaranteed heat rate in the ECA for loads in the combined cycle, however there may be slight deviations because they are still testing. Attachment 3 (PDF) is the guaranteed heat rate table for combined cycle which is the reference for the fuel efficiency in the calculations. For purposes of the evaluation GPA increased the heat rate which decreases the fuel efficiency by 5%. Using $100 per barrel for fuel cost and an average fuel heating value of 5.76MMBTU/bbl, a rate for fuel costs was calculated to be $0.1223 per kwh. This rate and the operation cost rate combine is the total cost for Ukudu at $0.1546 per kwh.

   - **Production Cost for GPA Existing System without Ukudu (Exhibit B Page 6):**

   GPA's average energy production over fuel costs is 13.4 kwh/gal. The average fuel cost considering Low Sulfur Residual Fuel Oil (LSRFO) and Ultra Low Sulfur Diesel (ULSD) is based on LSRFO used at Cabras to be 40% of total fuels consumed on average and 15% greater in cost compared to ULSD used at the other GPA plants and at Ukudu. The average fuel cost is

calculated to be $106 per barrel or $2.5238 per gallon. This rate divided by the fuel efficiency rate of 13.4 kwh per gallon is the Existing System Fuel rate at $0.1883. This value is compared with the total cost for Ukudu showing a savings of $0.0337 per kwh produced when Ukudu is operating. This savings multiplied by the projected energy of 151,875,000 KWH is a projected savings of $5,125,591.

Since the initial proposal and the requirements for CCU and PUC to now approve the ECA amendment before GPA can pay for any services, there has been a reduction in the number of operating days at 135 MW to 65 days. However, GPA still does expect to a significant savings to the customers as shown in the "Revised Period" worksheet of the Attachment 2 Excel file. GPA believes that replacement of lower efficiency units can still yield high savings in addition to providing capacity during the upcoming summer months.

3. Provide all documents, spreadsheets, calculations, or other materials in the possession of GPA which explain or demonstration the production costs of the proposals with and without Ukudu indicated in Exhibit B., and provide a written explanation.

**GPA Response:** The costs considered in the evaluation of the Ukudu proposal are the fuel costs for GPA existing units and for Ukudu Power Plant as well as the Fixed O&M (FOM) and the Variable O&M (VOM) costs for the Ukudu Power Plant. GPA analysis shows that the operation of the Ukudu Power Plant in its combined cycle operation will offset the Ukudu Fixed O&M costs and Variable O&M costs during the proposal period and still provide additional fuel savings to GPA customers.

Fixed O&M costs for most plants are mainly for labor and services required regardless of plant operation. The operation of Ukudu does not reduce GPA fixed costs. Variable O&M costs are based on energy production and is a small percentage of overall production costs, including fuel, especially over a short a short period of time. This can be confirmed with Ukudu Fixed Costs of $4.9M and an estimated Variable O&M Cost of $300,000. The variable O&M cost is only 6%. GPA does not consider the reduction of its Variable O&M costs of its existing units in this evaluation.

4. For the proposal costs of $4.9M, are FOMC and VOMC included in production costs? How fuel costs and production costs calculated?

**GPA Response:** GPA requests for the FOMC and VOMC to be paid through the fuel savings. Ukudu has proposed that the FOMC will be $4.6M to cover the fixed costs which is mainly labor to include technical representatives during this commissioning period and to not impact any warranties. The VOMC is estimated at $300,000 based on the estimated maximum production 151 GWH based on 135 MW operation for 15 hours over 75 days. Please see response for #2 above on the calculation description.