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8 **BEFORE THE GUAM PUBLIC UTILITIES COMMISSION**

9 **IN THE MATTER OF:**

10 The Application of the Guam Power Authority } **GPA DOCKET NO. 19-13**
11 to Approve the Energy Conversion Agreement } **PETITION FOR CONTRACT REVIEW**
12 (ECA) with KEPCO for the 198MW Power }
13 Plant. }

14 **COMES NOW**, the GUAM POWER AUTHORITY (GPA), by and through its counsel
15 of record, D. GRAHAM BOTHA, ESQ., and hereby files GPA's Petition for the Public Utilities
16 Commission of Guam to review and approve GPA's request for approval of the Energy
17 Conversion Agreement (ECA) with KEPCO for the 198MW Power Plant, as follows:

18 **BACKGROUND**

19 The Guam Power Authority contracted with Stanley Consultants as an EPCM to develop
20 the bid documents for the new power plant. On January 16, 2018 GPA issued Multi-Step Bid
21 GPA-034-18 for a Build, Own/Operate and Transfer Contract for 180MW \pm 10% for new
22 generation capacity. GPA received approval from the PUC in Docket 18-02 to use a three-part
23 multi-step process that requires bidders to be prequalified based on experience and financial
24 capability to receive the technical bid documents and submit a technical and price proposal. The
25 PUC in this docket authorized the Request for Qualifications process, and GPA selected seven
26 qualified bidders to proceed to the technical proposal and price proposal step. The technical
27 specifications were subject to further review and approval by the CCU and the PUC. Three
28 proponents, Powerflex (Wartsila), Hanwha Energy and Korea Electric Power Company
(KEPCO) submitted price proposals on June 3, 2019, to GPA. On June 10, 2019, the lowest
qualified bidder was determined to be KEPCO with a 25-year NPV of \$3,121,230,000. The
KEPCO cost was lower than the cost of Hanwha Energy (\$3,199,004,000 NPV) and Powerflex

1 (Wartsila) (\$4,019,294,000 NPV). KEPCO's proposal provides for a 198MW power plant
2 consisting of three (3) Siemens SGT-800 45MW combustion turbines and one (1) 63MW
3 Siemens steam turbine. For additional reliability, the proposal also includes one (1) 25MW
4 Battery Energy Storage System (BESS) and 64MW of additional small diesel generators. GPA
5 and KEPCO negotiated the Energy Conversion Agreement (ECA) and schedules. The CCU in
6 Resolution 2019-12 has approved GPA's request for approval of the Energy Conversion
7 Agreement (ECA) with KEPCO for the 198MW Power Plant.

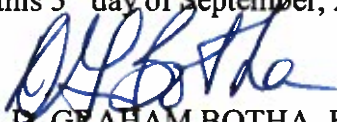
8 **DISCUSSION**

9 GPA hereby petitions the PUC, pursuant to the Contract Review Protocol for the Guam
10 Power Authority, approved by the PUC, to review and approve the Energy Conversion
11 Agreement (ECA) with KEPCO for the 198MW Power Plant. The KEPCO power plant project
12 is a Build, Own/Operate, and Transfer (BOT) contract using an Independent Power Producer
13 (IPP) model for twenty-five (25) years. The dual-fired power plant can use ultra-low sulfur
14 diesel (ULSD) or natural gas, and will comply with all federal and local environmental
15 requirements. The power plant has a 51% thermal efficiency which substantially exceeds
16 existing generating units' heat rates, and will produce the greatest fuel savings for ratepayers. In
17 support of this Petition, GPA hereby provides the PUC with Consolidated Commission on
18 Utilities (CCU) Resolution No. 2019-13, which approves the Energy Conversion Agreement
19 (ECA) with KEPCO for a 198MW dual fuel power plant, subject to the review and approval of
20 the PUC. Said resolution and its exhibits are attached herein as Exhibit A, and incorporated by
21 reference herein as if fully set forth.

22 **CONCLUSION**

23 The PUC should approve GPA's request for approval of the Energy Conversion
24 Agreement (ECA) with KEPCO for the 198MW Power Plant. The proposed 198MW power
25 plant will be essential to ensuring compliance with USEPA environmental regulations, and is
26 reasonable, prudent, and necessary.

27 **RESPECTFULLY SUBMITTED** this 5th day of September, 2019.

28 
D. GRAHAM BOTHA, ESQ.
GPA General Counsel



RESOLUTION NO. 2019-013

Relative to Approving the Energy Conversion Agreement (ECA) for the New Dual Fuel Power Plant and Authorizing the Guam Power Authority (GPA) to Petition the Guam Public Utilities Commission (GPUC) to Approve the Energy Conversion Agreement (ECA) with Korea Electric Power Company (KEPCO)

WHEREAS, Integrated Resources Planning (IRP) is a public process in which GPA planners work together with other interested stakeholders to identify and prepare energy options that serve the highest possible public good at the lowest cost. The IRP process is a conversation between the Authority, its customers, regulators, and other stakeholders on Guam’s Energy Future; and

WHEREAS, in 2008 the Consolidated Commission on Utilities (CCU) approved GPA’s IRP which recommended to continue development of renewable energy resources, to improve fuel efficiencies through modern technology and to seek opportunities for diversifying to lower cost and cleaner fuel sources, including the potential to use Liquefied Natural Gas (LNG) as an alternate fuel source; and

WHEREAS, in 2008, the CCU and GPA worked with the late Speaker Ben Pangelinan, the Guam Legislature and Governor Felix Camacho to pass P.L. 29-62 to establish Guam’s first Renewal Portfolio Standard (RPS). The public policy set a goal to have no less than 25% of Guam’s electricity to be provided by renewable energy sources by 2035 in order to reduce Guam’s exclusive energy dependency on oil and to reduce the island’s carbon footprint; and

WHEREAS, in FY2013 GPA updated its Integrated Resource Plan (IRP) to address new U.S. Environmental Protection Agency (USEPA) regulations on emissions by recommending a generation resource plan which included fuel conversion from residual fuel oil to Ultra-Low Sulfur Diesel (ULSD) Fuel Oil and LNG, replacement of older, less fuel efficient and high production cost generating units with new, more fuel efficient, lower operating cost generating units, which would also allow for even more renewable energy assets to be added to the system; and

WHEREAS, on October 27, 2014 the Consolidated Commission on Utilities (CCU) authorized GPA in Resolution 2014-48 to petition the Guam Public Utilities Commission (PUC) for approval of the procurement of a new dual fuel power plant; and

WHEREAS, GPA’s justification for procuring a new dual fuel power plant was the need to lower rate payer costs by reducing the amount of fuel needed to supply Guam’s power, and for

32 base load generating units to come into compliance with certain environmental regulations issued
33 by the United States Environmental Protection Agency (USEPA) under the Clean Air Act, which
34 include the RICE-MACT regulations (slow-speed generators), EGU-MACT regulations (steam
35 generators); and

36 **WHEREAS**, the PUC in its January 29, 2015 order, rejected GPA's petition for approval of the
37 procurement of a new dual fuel power plant, and stated that the petition does not present
38 sufficient evidence that the proposed new power plant is justified; and

39 **WHEREAS**, on January 30, 2015, GPA submitted its proposed compliance schedule to USEPA
40 which detailed GPA's plans to construct a new dual fuel power plant no later than September 30,
41 2019, retire all four Cabras steam plants, and to convert MEC 8 & 9 units to ULSD within one year
42 after the commissioning of the new power plant; and

43 **WHEREAS** on March 24, 2015, CCU Resolution 2015-21 authorized GPA to petition the PUC for
44 approval of procurement documents for engineering and technical consulting services to support
45 implementing the USEPA compliance plan which includes procurement, contracting, construction
46 and commissioning support for a dual fuel power plant; and

47 **WHEREAS**, on May 28, 2015 the PUC in its order in GPA Docket 15-05 deferred GPA's request
48 to begin procurement for new engineering and technical consulting services relating to the new
49 dual fuel power plant; and

50 **WHEREAS**, on August 31, 2015 an explosion and fire occurred at GPA's Cabras 3 & 4 power
51 plants resulting in the loss of 79 MW of baseload generation capacity; and

52 **WHEREAS**, on October 29, 2015 the PUC ordered GPA in Docket 15-05 to update the
53 Integrated Resource Plan (IRP) as a result of the August 31, 2015 explosion and fire at Cabras 3 &
54 4; and

55 **WHEREAS**, on May 24, 2016 CCU Resolution 2016-36 authorized GPA to petition the PUC to
56 proceed with the Procurement of a new dual fuel power plant and for approval of the plan using
57 the Independent Power Producer (IPP) model. In addition, CCU authorized GPA to procure the
58 services of an Engineering, Procurement and Construction Management (EPCM) firm to assist in
59 the procurement of the new power plant and act as GPA's owner representative; and

60 **WHEREAS**, on October 27, 2016, the PUC in Docket 15-05 approved GPA's petition to procure
61 new generation based upon the Independent Power Producer (IPP) model as a Build Operate
62 Transfer (BOT), including assorted transmission facilities and pipelines for both ULSD and LNG.
63 The technology for the new generation shall not preclude any type of technology, and could be
64 combined cycle units, internal combustion units, and/or renewable energy, subject to PUC

65 procurement protocol. In addition, PUC also approved the consulting services and funding to
66 support the procurement development for an IPP contract; and

67 **WHEREAS**, on November 22, 2016, CCU Resolution 2016-66 authorized GPA to procure
68 property in the Harmon area, close to the Harmon substation for the location of the new power
69 plant; and

70 **WHEREAS**, on January 24, 2017 CCU Resolution 2017-01 authorized GPA to contract for an
71 Engineering, Procurement and Construction Management (EPCM) for the development of an IPP
72 contract for new generation capacity and to represent GPA as Owner's engineer support during
73 the construction of the new power plant. Stanley Consultants, Inc. was determined to be the
74 most qualified and was the firm GPA selected; and

75 **WHEREAS**, on April 18, 2017, the PUC authorized GPA to proceed with the IRP, and approved
76 the procurement of new efficient, reliable, cost effective baseload generation without prohibition
77 of LNG considerations; and

78 **WHEREAS**, on April 27, 2017 the PUC ordered GPA in Docket 15-05 supplemental order to
79 open the new power plant bid to the market to offer technology neutral/agnostic solutions
80 including combined cycle, internal combustion engines, and renewables; and

81 **WHEREAS**, on September 26, 2017 CCU Resolution 2017-39 authorized GPA to petition the PUC
82 for approval of a multi-step bid process and to initiate the Request for Qualifications to establish a
83 bidders list for the procurement of a new dual fuel power plant; and

84 **WHEREAS**, October 13, 2017 CCU Resolution 2017-42 authorized GPA to execute the real
85 property purchase agreement for 60 acres of unimproved real property in the Harmon (Ukudu)
86 area for a price not to exceed \$10,870,000 and to commence rezoning efforts, and to petition the
87 PUC for approval of this purchase; and

88 **WHEREAS**, on November 30, 2017, the PUC approved in Docket 18-02 a multi-step
89 procurement process and authorized GPA to issue the Request for Qualifications for the new dual
90 fuel power plant; and

91 **WHEREAS**, on January 16, 2018 GPA issued Multi-Step Bid GPA-034-18 for Build,
92 Own/Operate and Transfer Contract for the new dual fuel power plant; and

93 **WHEREAS**, on May 16, 2018, Public Law 34-102 was enacted that consolidated the lots and
94 rezoned the lots from R-2 to M-1 for the construction and operation of GPA's new dual fuel
95 power plant; and

96 **WHEREAS**, on May 31, 2018, the PUC in Docket 18-14 approved GPA's purchase of the Harmon
97 (Ukudu) property for the new dual fuel power plant and to enter into the proposed Contract of
98 Sale; and

99 **WHEREAS**, on July 24, 2018 CCU Resolution 2018-015 approved GPA's request to petition the
100 PUC for the approval of the Technical Bid documents for Multi-Step Bid GPA-034-18 for the Build,
101 Own/Operate & Transfer (BOT) Contract for the new dual fuel power plant. PUC Docket 18-02
102 required GPA to submit and obtain approval of the technical bid documents from PUC; and

103 **WHEREAS**, on August 30, 2018, the PUC approved the technical bid documents allowing GPA to
104 issue the bid for public bidding; and

105 **WHEREAS**, from an initial list of 18 bidders and 7 qualified proponents, GPA received price
106 proposals from Powerflex (Wartsila), Hanwha Energy and Korea Electric Power Company (KEPCO)
107 on June 3, 2019. The evaluation criteria included financial capacity, experience, qualifications and
108 technical proposal. There were no proposals strictly using only renewables; and

109 **WHEREAS**, on June 10, 2019, GPA determined that the lowest qualified bidder was KEPCO, with
110 a 25-year Net Present Value (NPV) cost of \$3,121,230,000. This cost was lower than the cost of
111 Hanwha Energy (\$3,199,004,000 NPV) and Powerflex (Wartsila) (\$4,019,294,000 NPV); and

112 **WHEREAS**, the proposal provides a plant with a thermal efficiency of 51% which substantially
113 exceeds existing generating units heat rates, (64% more efficient than Cabras) and will produce the
114 greatest fuel savings for ratepayers; and

115 **WHEREAS**, GPA is now requesting the CCU to review and approve the Energy Conversion
116 Agreement (ECA), and its supporting schedules and documents, with KEPCO (**Exhibit A**) for the new
117 dual fuel power plant; and

118 **WHEREAS**, under the ECA, KEPCO's proposal is to build, finance, operate and transfer
119 ownership to GPA after twenty-five years a new dual fuel power plant for a total firm capacity of
120 **198 MW** consisting of three (3) Siemens SGT-800 45 MW combustion turbines for total MW
121 capacity of 135 MW; and one (1) 63 MW Siemens steam turbine; and

122 **WHEREAS**, the proposal also included for increased reliability and to meet the guaranteed 96%
123 availability, one (1) 25 MW Battery Energy Storage System (BESS) to improve reliability; and 64 MW
124 of additional small diesel generators to further insure reliability; and

125 **WHEREAS**, the commissioning of the new dual fuel power plant is critical to meeting GPA's
126 Compliance Plan with USEPA. Discussions and negotiations for a consent decree are currently
127 ongoing between GPA and USEPA. GPA's plan is to have all power plants compliant with USEPA

128 regulations, which includes the retirement of Cabras 1 & 2, and the conversion of MEC 8 & 9 to
129 also be dual fuel capable; and

130 **WHEREAS**, the new dual fuel power plant will provide high reliability and substantial O&M
131 savings, while burning less fuel when compared to the aging Cabras power plants. The fuel
132 efficiency savings will reduce the initial cost of using a more expensive, though cleaner fuel. The
133 new dual fuel power plant will reduce GPA's annual fuel consumption by about 35 million gallons
134 of fuel per year; and

135 **WHEREAS**, the new dual fuel power plant can also burn natural gas which is much less
136 expensive than ULSD. Converting from ULSD to LNG would significantly lower fuel costs for
137 ratepayers even more; and

138 **WHEREAS**, the new dual fuel power plant is projected to lower the average residential power
139 bill by 7.95%, while burning ULSD, once completed in 2023. All other rate classes would also
140 benefit from similar reductions in their power bill; and

141 **WHEREAS**, if GPA is eventually permitted to use LNG instead of ULSD as a fuel source, average
142 residential power bills are projected to be lower by 21.15%, with similar savings for all other rate
143 classes; and

144 **WHEREAS**, the technology mix proposed by the new plant will allow for the addition of more
145 renewable energy assets in the future, which would further lower ratepayer power bills while also
146 reducing the amount of fuel used for energy and Guam's carbon footprint; and

147 **WHEREAS**, these potential savings are not attainable unless GPA is first allowed to enter into
148 an ECA with KEPCO, as described herein; and

149 **WHEREAS**, the new dual fuel power plant would provide new capacity to meet the military
150 buildup load growth; and

151 **WHEREAS**, time is of the essence to obtain approvals from the CCU and the PUC in order to
152 meet GPA's goal of commissioning the new power plant by October 2022 to comply with the
153 applicable USEPA standards; and

154
155 **NOW THEREFORE, BE IT RESOLVED**, by the Consolidated Commission on Utilities, subject to the
156 review and approval of the Public Utilities Commission, as follows:

- 157 1. For all the reasons listed herein, and based on all the additional analysis provided by
158 GPA over the course of this planning, bidding and evaluation process, the CCU
159 determines that is in the best interest of the ratepayers of Guam to proceed with the
160 award and execution of the proposed ECA with KEPCO; and


161 2. The CCU authorizes the GPA General Manager to contract with KEPCO via the enclosed
162 ECA, and its attachments, to Finance, Build, Own/Operate and Transfer for a 198 MW
163 new dual fuel power plant and related assets.
164

165 **RESOLVED**, that the Chairman of the Commission certifies and the Secretary of the Commission
166 attests the adoption of this Resolution.
167

168 **DULY and REGULARLY ADOPTED this 3rd day of September, 2019.**
169

Certified by:

Attested by:



JOSEPH T. DUENAS
Chairperson
Consolidated Commission on Utilities



MICHAEL LIMTIACO
Secretary
Consolidated Commission on
Utilities

170
171 **I, Michael Limtiaco, Secretary for the Consolidated Commission on Utilities (CCU), as**
172 **evidenced by my signature above do certify as follows:**

173 The foregoing is a full, true, and correct copy of the resolution duly adopted at a regular
174 meeting of the members of Guam Consolidated Commission on Utilities, duly and legally held at the
175 meeting place properly noticed and advertised at which meeting a quorum was present and the
176 members who were present voted as follows:

177
178 Ayes: 5
179 Nays: 0
180 Absent: 0
181 Abstain: 0
182
183
184

