

**PUBLIC UTILITIES COMMISSION
OF GUAM**

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October 7, 2020

Senator Clynton E. Ridgell
Chairman, Committee on Economic Development,
Agriculture, Maritime Transportation,
Power & Energy Utilities and Emergency Response
35th Guam Legislature
238 Archbishop Flores St.
Suite 906
DNA Building
Hagatna, Guam 96910

Re: Testimony of the Guam Public Utilities Commission on Bill No. 315-35

Dear Senator Ridgell:

The Guam Public Utilities Commission ["PUC"] opposes the enactment of Bill No. 315-35 on three principal grounds: (1) the Bill improperly usurps authority for rate setting matters that are within the statutory and Organic Act jurisdiction of the PUC; the Bill removes the authority of the PUC to set compensation rates for Net Metering Customers who produce excess energy and to determine the penetration level for energy produced by Net Metering Customers. The provisions in the Bill are undesirable, bad public policy, and impose restrictions that are directly contrary to the findings of the PUC in GPA Docket 19-04; (2) the Bill would destroy the independent rate-making authority of the PUC for the net metering program, as established by the Organic Act and Guam statutes; and (3) the Bill violates the iron-clad agreement of the government of Guam under GPA Bond Covenants not to interfere with the powers and duties of the PUC. GPA Bond Counsel has stated his opinion that Bill No. 315 violates GPA Bond Covenants.

I. BILL NO. 315-35 REMOVES THE AUTHORITY OF THE PUC TO SET COMPENSATION RATES FOR NET METERING CUSTOMERS WHO PRODUCE EXCESS ENERGY AND TO DETERMINE THE PENETRATION LEVEL FOR ENERGY PRODUCED BY NET METERING CUSTOMERS.

- A. In Public Laws 27-132 and 29-62, the Guam Legislature established the authority of the Guam Public Utilities Commission to determine compensation rates for Net Metering Customers and to establish rules and regulations for operation of the Net Metering Program, such as the level of penetration for energy produced by Net Metering Customers.

The PUC has previously testified on numerous occasions before the Guam Legislature that both the Organic Act and the laws of Guam establish the PUC as the “independent rate making authority” responsible for all matters related to the setting of rates for public utilities such as GPA. The purpose for the establishment of the PUC was to completely remove the Guam Legislature and politics from the rate setting process. Bill No. 315 violates these fundamental principles by engaging in rate setting and purporting to remove the PUC from the rate setting process.

The Bill first adds a new, §8503(b)(4), to Article 5, Chapter 8, Title 12, which would require GPA to “set the level of penetration of Net Metering Systems to an aggregate capacity limit of twenty percent (20%) of the utility’s total system peak demand.” The level of penetration is a standard set by the PUC to determine what percentage of total capacity that Net Metering Customers can produce before there could be an adverse impact to the power system. The penetration level is also utilized by the PUC to determine when the compensation rates for Net Metering Customers for excess energy produced should be changed or altered. Under the present Net Metering Program, Net Metering Customers are credited for excess power produced by their Net Metering systems, that is power in excess of the amount required for the Customer’s own power consumption.

From the onset of initial legislation authorizing the creation of the net metering system, it has been GPA and the PUC that have been responsible for establishing and implementing the Net Metering Tariff, and setting the level of penetration for the net metering systems. In fact, in Public Law 27-132, the Guam Legislature placed the PUC in charge of implementing the net-metering program by requiring that it promulgate rules and regulations for such implementation. Public Law 29-62 established that the rate structure for the net metering program is subject to the approval of the PUC. In accordance with those prior laws, the Legislature should not be involved at all with setting the rate structure or level of penetration for net metering systems.

On December 29, 2008, in GPA Docket 08-10, the PUC implemented the Net Metering Rider, which is a Tariff establishing rates and all other terms and conditions for eligibility for the net metering program. See PUC Order dated December 29, 2008, attached hereto as Exhibit "1". The PUC did establish a process for determining proper penetration levels for net metering customers. The Rider states: "[T]he NM rider is available to all customers without limitation as the aggregate capacity of Customer-Generator Installations on the GPA system. **However, at that time the number of Customer-Generators exceeds one-thousand (1000) customers this issue will be reviewed by the PUC and a determination made as to the continued offering of the NM Rider for new "net metering" customers."**

Over the years, the PUC has repeatedly exercised jurisdiction over the net metering program. On February 27, 2009, in Docket 08-10, the PUC approved the Standard Interconnection Agreement between GPA and net metering customers and the Net Metering Program Interconnection Policy. On September 24, 2014, in GPA Docket 11-09 [the FY13 RATE DECISION], the PUC rejected GPA's attempt to change the rate of compensation provided by it to net metering customers for the 100% "retail rate" to a lower "LEAC" rate related to "avoided fuel cost." The main reason for the denial was that the PUC determined that the level of penetration of net metering customers had only reached 77 customers, and not the milestone of 1,000 customers established by the Net Metering Rider.

On February 26, 2015, in GPA Docket 15-09, the PUC considered a Petition by the Guam Renewable Energy Association to extend the life of renewable energy credits for net metering customers beyond the period of the established one-year term. A study was ordered. On December 10, 2015, in GPA Docket 08-10, the PUC changed the Net Metering Rider to allow net metering customers to carry over any unused kWh credits for excess energy produced beyond twelve months. The customer was then allowed to elect whether to carry the credits forward, or to have GPA purchase all kWh credits remaining on their account at a one-to one retail rate. On May 28, 2020, the PUC reversed its prior determination that Net Metering Customers could carry over excess kWh credits beyond one year. At the end of each year the Customers would not be entitled to compensation for such credits.

In GPA Docket 19-04, GPA again sought to modify the current Net Metering Rider and to reduce the compensation of net metering customers for excess energy produced from the "retail rate" to a "value of solar" compensation. In practical terms, GPA sought to compensate new net metering customers for excess energy produced at a value of solar rate of \$0.161995 /kWh, rather than the prior 100% retail rate provided of \$0.24886/kWh. GPA argued that the level of net metering penetration now exceeded 1,000 customers; under the Net Metering Rider. GPA demonstrated that, at that time, there were approximately 2,000 net metering customers. In its Order dated May 30, 2019, the PUC indicated that it agreed to review the matter because the Net Metering

Rider provided that the PUC would review the compensation when the number of net metering customers exceeded one-thousand (1000) customers. See PUC Order attached hereto as Exhibit "2".

After holding three public hearings, the Commission issued the Order in GPA Docket 19-04 rejecting a change in compensation for net-metering customers. However, the PUC specifically changed the prior level of penetration level of 1,000 net metering customers. The PUC amended the Net Metering Rider cap **"to be changed from a customer cap of 1000 net metering customers to an aggregate kW cap set at 10% of GPA's August 1, 2017 system peak demand of 261 MW."** Ordering Provision No. 4. The PUC further held that the following amendment would be added to the Net Metering Rider: "However, when the capacity of Customer-Generator installations on the GPA system exceeds an aggregate KW cap (10%) of the utility's system peak demand (261 MW), the PUC will review the net metering program, determine whether the NM Rider should continue to be offered for new "net metering" customers, and consider whether any other adjustments should be made to compensation rates paid by GPA to customer-generators for capacity generation."

The PUC further held as follows: "GPA may petition the PUC for further changes to the NM Rider, including the rate of compensation paid to net metering customers, prior to the time at which the aggregate KW cap (10%) of the utility's system peak demand is met, but only if it has met all of the following preconditions: (1) the distribution system impact study which GPA has already planned shall be completed; (2) GPA shall have conducted and completed a full, balanced benefit-cost analysis that analyzes all of the impacts distributed generation has on the distribution system, especially specific to the location of the distributed generation on the system; (3) A third-party consultant, undertakes and completes an independent study determining the cost of grid and other services used by NEM customers and which identifies, in detail, the specific value of those services to the NEM customers. The studies referenced in (2) and (3) above shall only be undertaken upon joint approval of the PUC and GPA, and shall be undertaken at the expense of GPA."

B. Bill 315 usurps the PUC's power to set the level of penetration for Net Metering Customers by improperly transferring such power to the Legislature.

The Legislature's attempt to set the level of penetration for net metering customers is an interference with the PUC's rate making function. Bill 315 establishes a rule that all net metering customers included within the 20% penetration level would forever be guaranteed the full rate of compensation at the retail rate. See proposed amended §8503(b)(3) ("compensation provided to the utility during the billing period at a rate of not less than the full retail rate"). Whether net metering customers should forever be entitled to a retail rate is a rate issue to be decided by the PUC. Setting the level of penetration is directly tied to establishment of rates for net metering customers. PUC,

not the Legislature, should determine the level of penetration. It should also determine the length of time for which existing customers should be entitled to retail rates, and when new rates should be established for new Net Metering Customers.

In GPA Docket 19-04, for existing Net Metering customers, GPA proposed to implement a Grandfather phase-out approach over five years. After five years, existing NEM customers would only be compensated at the “value of solar” or avoided cost rate. GPA’s approach differs substantially from that of Bill 315, which would grandfather existing Net Metering Customers, up to the 20% penetration level, at the “retail rate” forever. The PUC has not yet addressed this issue. In GPA Docket 19-04, the PUC indicated that the issues of level of penetration, as well as compensation rates to be paid for existing and new Net Metering customers, would be examined again when GPA reaches an aggregate of 10% of total capacity through net metering.

At present, GPA has not yet reached the 10% level of penetration. The most recent figures from August indicate: Aug 2020: 2,119 Net Metering Customers: 24,363KW. GPA will reach the 10% penetration level at 26,000KW, or 261MW. At that time the PUC will again address issues concerning the appropriate level of penetration of total production by Net Metering customers, and whether rates for existing and new Net Metering Customers should be changed. These are issues for the PUC, and not the Guam Legislature, to decide.

In effect, what Bill No. 315-35 is attempting to do is to nullify the PUC Order, and implement by fiat a twenty percent (20%) level of penetration which would grandfather all current Net Metering Customers at the full retail rate. The PUC, and not the Guam Legislature, should determine which, if any, Net Metering customers are grandfathered at the retail rate, and what period of years, if any, at which current customers should be guaranteed a retail rate. Many jurisdictions in the United States have already determined that net metering customers should receive less than the retail rate.

- C. The Distribution system study ordered by Bill 315 is unnecessary, as the PUC has already ordered numerous such studies; the 20% penetration level established by the Bill is not based upon any evidence, study, or determination that such is the appropriate level, and is contrary to the recommendations of PUC Consultant Daymark Energy Advisors.

Within six months after such capacity limit of 20% is reached, the Bill would require GPA to conduct “a complete distribution system study containing a full benefit-cost analysis that provides analysis of the impacts of distributed generation on the distribution systems...” The Bill would further prohibit GPA from approving new applications for net metering systems beyond the aggregate capacity limit until such time when the distribution study is completed. §8505(b)(4)(A)(B). The Bill precludes

GPA from filing, or the PUC from reviewing, new applications for net metering until the new study is completed. §8503(b)(4)(B). These are further restrictions on PUC's rate making authority. The provision of Bill 315 requiring a further distribution study is completely unnecessary and redundant. In GPA Docket 17-06, the PUC already approved a GPA-Navy Renewables Integration Study. Furthermore, in GPA Docket 19-04, PUC has already required that GPA complete a "distribution system impact study" before the PUC will make any further determinations on the rate of compensation for Net Metering Customers or the level of penetration. In the past 15 years, GPA has conducted over 57 studies relating to integration of renewables into the IWPS, battery storage, and system performance/reliability.

On what basis does the Legislature substitute its determination that there should be a 20% aggregate capacity level of penetration? This is an issue that requires technical studies and consultant opinions. The PUC has been involved in the determination of such issues for years and has a full complement of research and consulting services. PUC submits that a 20% cap is ill-advised and could have disastrous effects upon the island wide power system. This level cannot be cavalierly implemented without serious study and investigation. How can the Legislature assure that having 20% of GPA power based upon net metering will not adversely impact the power system and cause tremendous problems with reliable power, such as intermittent power outages? The PUC set a penetration level at 10% based upon the recommendation of its rate consultant Daymark Energy Advisors, which found that the 10% aggregate cap proposed by it was higher than most U.S. States with similar caps. Daymark also found that Hawaii started to experience circuit level issues when penetration reached 10%. It determined that the 10% cap would enable GPA to conduct its distribution system impact study and further determine the overall benefits and costs that customer-generators have on the distribution system.

Attached as Exhibit "3" are portions of the Net Metering Study of Daymark Energy Advisors, dated March 20, 2019, which address issues concerning the appropriate level of penetration of power production by Net Metering Customers for Guam. The research of Daymark demonstrates that, for those states and jurisdictions that have penetration caps, 20% is far above the average and is not ordinary or usual. The PUC is not aware of any evidence which shows that 20% is a reasonable or appropriate penetration level for Guam.

A Proposed amendment to 12 GCA, §8505(b)(3)(B) claims that GPA could petition to change the rate of compensation for new customer-generators who enter the Net Metering Program after the utility determines that the level of penetration exceeds 20%. However, that provision is inconsistent with §8505(b)(3)(A), which indicates that all electricity generated by customer-generators, without limitation to such customers before or after the 20% level of penetration is achieved, are entitled to be compensation for excess electricity provided to GPA at "**not less than the full retail rate.**" The Bill

institutes a retail rate for all net metering customers, whether existing or new. The provisions of the Bill are internally inconsistent.

II. BILL NO. 315-35 WOULD DESTROY THE INDEPENDENT RATE-MAKING AUTHORITY OF THE PUC FOR THE NET METERING PROGRAM, AS ESTABLISHED BY THE ORGANIC ACT OF GUAM AND THE STATUTES OF GUAM.

The Bill is an attempt to remove rate-making authority from the PUC and vest such authority in the Guam Legislature. The Bill affectively sets rates, by prohibiting GPA or the PUC from decreasing compensation to net metering customers from the "retail" rate who fall within the 20% penetration level (twenty percent of GPA's total system peak demand produced by renewable energy). On its face, this Bill completely removes the PUC from its role in determining, pursuant to 12 GCA § 8505(b)(3), the rate at which customer-generators will be compensated for electricity provided to the utility. Through amendment, this Bill completely removes the PUC from the rate determination process.

The Guam Public Utilities Commission was created to assure bondholders that there would be an independent rate making authority in Guam separate and apart from the political process. The purpose for the PUC is clearly stated in the Organic Act of Guam. That purpose was "the establishment of an independent rate-making authority by the Government of Guam..." 48 USC § 1423a, as amended by P.L. 98-454, Title II, § 203, 98 Stat. 1733 (1984). In accordance with its statutory powers and duties, the PUC is the only body authorized to establish and modify rates and charges for services with regard to GPA. 12 GCA § 12105(a).

There are numerous ways in which Bill 315 restricts and infringes upon the rate making authority of the PUC. New §8503(b)(4) removes the present power of the PUC to set a level of penetration of net metering systems to an aggregate capacity limit of GPA's total system peak demand. It imposes requirements upon GPA to conduct distribution systems studies, a power which has previously been within the exclusive jurisdiction of the PUC.

More fundamentally, §8505(b)(3), as amended completely removes the power and authority of the PUC to determine the rate of compensation for customer-generators where the electricity they generate exceeds the electricity supplied by the utility during a billing period. The compensation to net metering customers can never can be "less than the full retail rate." Thus, this Bill would forever foreclose the PUC from ever reducing the rate of compensation paid to net metering customers! It is a complete repudiation and withdrawal of the present rate making authority of the PUC. Under the amendment, PUC would be precluded from ever changing the rate of compensation of existing customer-generators whose net metering systems fall within the aggregate

capacity limit of 20% of the utility's total system peak demand. PUC would likely be further prohibited from even changing the rate of compensation for new Net Metering Customers. It is completely inappropriate for the Legislature to dictate that PUC is prohibited from altering the compensation rate of existing and future net metering customers.

At present, pursuant to §8505(b)(3), it is the Guam Public Utilities Commission that determines the compensation to which net metering customers are entitled, and specifically to determine the rate provided to such customers ("at a rate to be determined by the Public Utility Commission"). That proposed section deletes the language "to be determined by the Public Utilities Commission" in regard to rates. So, the PUC is removed from rate setting for Net Metering Customers, and the rate set by the Legislature for Net Metering Customer compensation would be the "retail rate".

In further derogation of the powers of the PUC, this Bill would prohibit GPA from petitioning PUC to change the rate of compensation to existing customer-generators whose net metering systems fall within the aggregate capacity limit of 20% established in §8503(b)(4). These prohibitions are contrary to the PUC's Order in GPA Docket 19-04, which allows GPA to petition the PUC when the penetration level exceeds 10%, and even earlier if supported by GPA's system distribution study. These are serious and immediate impacts of the Bill that interfere with the rate-setting authority of the Guam Public Utilities Commission.

The provisions of the Bill are also directly contrary to 12 GCA §8506. That section, enacted in 2008, authorized GPA to institute an interim, emergency net metering rate structure where customers were entitled to receive credit for one hundred percent (100%) of their power generation capacity... "until such time that GPA submits a rate structure to the PUC for the net metering program and it is approved by the PUC. This interim rate shall be subject to PUC revocation at any time." In other words, section 8506, which is unaltered by the Bill, also grants full authority over rates and the development of a rate structure for net metering to the PUC.

Bill 315 would also strip away numerous other statutory powers and authorities granted to the PUC. The Bill would remove the "regulatory oversight supervision of rates" of the PUC with respect to Net Metering and the rates of compensation to which net metering customers are provided, contrary to 12 GCA § 12105(a).

The Bill would remove the complete and absolute power of the PUC to "establish and modify from time to time, reasonable rates and charges for services, including... the Guam Power Authority...), as provided by 12 GCA § 12105(e). The Legislature's establishment of rates for net metering customers violates the prescription that "no rate, charge or assessment cost shall be established, abandoned, modified, departed from or

changed without a public hearing **and the prior approval of the Commission**", pursuant to 12 GCA §12116, Regulation of Rates.

Thus, the Bill also interferes with the authority of Guam Power Authority under 12 GCA §8104(d), to adopt rates and charges for electric service subject to approval of the Public Utilities Commission. Bill 315 would destroy the independence of the PUC with regard to setting rates for the Net Metering Program.

III. BILL NO. 315 VIOLATES THE IRON-CLAD AGREEMENT OF THE GOVERNMENT OF GUAM UNDER THE GPA BOND COVENANTS NOT TO INTERFERE WITH THE POWERS AND DUTIES OF THE PUC.

Bill No. 315-38 violates the rate covenant of the Government of Guam not to interfere with the powers or duties of the PUC. The indenture also includes a pledge by the Government not to repeal, amend, or modify the law in any manner that would "substantially impair the powers, duties or effectiveness of the PUC... in relation to GPA and its rates."

Bill No. 315, if enacted into law, would violate the rate covenants included in GPA's Bond Indentures, as well as the public laws authorizing and approving those indentures. The Bill would also likely be deemed to be an impairment of the contractual rights of the holders of the bonds violating the Contracts Clause of the U.S. Constitution and the Organic Act. The purchasers of GPA bonds required an iron-clad assurance that GPA's rates would be set by an independent rate making authority which would be obligated to provide GPA the rates necessary to produce the revenues required by GPA to meet its obligations under the indenture. Enactment of Bill No. 315 would be a breach of the Government of Guam's promise. In direct contravention of the clear intent of 12 GCA §8113.3 and GPA's bond indenture (itself approved by the Legislature), Bill No. 315 would inject the Legislature into the rate-making process.

Section 6.20 of the GPA Bond Indenture includes a pledge by the Government of Guam that it would not "substantially impair the powers, duties or effectiveness of the Public Utilities Commission thereunder in relation to the Authority or its rates." Section 6.17 of the GWA Bond Indenture provides the Government of Guam pledges to the holders of all bonds "to maintain the rights, powers and duties of the Board and the Guam Public Utilities Commission, or their respective successors in accordance with law, to fulfill the terms of Bonds in this Indenture..." This Bill would eviscerate the PUC's independent rate-making authority and hinder it and prevent it from fulfilling its statutory obligations.

The proposal of Bill No. 315 indicates a lack of understanding concerning the history of the creation of the Guam Public Utilities Commission. The Guam Public Utilities Commission was created as a result of several defaults by GPA on bonds that it had

issued to raise funds to pay for the Cabras 1 and 2 baseload generators in the 1970's. The Guam Legislature failed to provide sufficient rate revenues to GPA to pay its debt obligations. At that time there was no PUC and the Legislature was in charge of setting rates for GPA. GPA sought loans from the federal government to bail it out. The Federal Government, through the Federal Financing Bank, was authorized in the Organic Act to refinance GPA's obligations; however, the refinancing was "conditioned on the establishment of an independent rate-making authority by the Government of Guam..." GPA's underwriters insisted that the bond holders would be protected by the existence of an independent rate-making authority, and insisted that the Government of Guam ensure the independence and effectiveness of the PUC through the adoption of the covenant requiring non-interference with the independence and effectiveness of the PUC (P.L. 21-117, enacted in 1992, which added 12 GCA §8113.3 to GPA's enabling legislation).

The Guam Legislature has traditionally recognized the need to preserve a strong, independent Public Utilities Commission. As stated in Public Law No. 26-18: "Section 1. Legislative Findings and Intent. *I Liheslaturan Guåhan* finds that a **strong public interest is served by maintaining a strong, independent Public Utilities Commission of Guam ("Commission")**, which is independent of the Executive and Legislative Branches. Federal legislation, which authorized the transfer of the U.S. Navy's electric power assets to the Guam Power Authority ("GPA") under the GPA - Navy customer service agreement, was conditioned on Guam's creation of an independent public utilities commission. Moreover, GPA's bond indenture agreements require the existence of an independent Commission."

Bond Counsel to the Guam Power Authority, John Y. Wang of the Orrick Law Firm, states his opinion that Bill 315 violates GPA's rate covenants and "quite frankly, triggers issues with the Organic Act, which calls for an independent PUC."

CONCLUSION

For the foregoing reasons, the Guam Public Utilities Commission recommends that Bill No. 315-35 be rejected. The Legislature cannot allow this proposed legislation to compromise the powers of the independent Public Utilities Commission. Bill 315 circumvents and violates the promise of the Government under the Rate Covenant not to interfere with the powers or duties of the PUC.

Sincerely,



Jeffrey C. Johnson
Chairman
Guam Public Utilities Commission

BEFORE THE GUAM PUBLIC UTILITIES COMMISSION



IN THE MATTER OF:)
NET METERING (pursuant to P.L. 27-132)
and 29-62)))
_____)

Docket No. 08-18

DECISION AND ORDER

Public Law 27-132 authorized the creation of a "net-metering system". Thereunder, customer-generators are authorized to establish facilities for the production of electrical energy, using various types of alternative energy sources. "Net-metering" is a service to the customer under which electric energy is generated by that electric customer from an eligible on-site generating facility and is delivered to Guam Power Authority (GPA) local distribution facilities. Net Metering is the measure of the difference between electricity supplied by a utility and the electricity generated by a customer-generator which is fed back to the utility over the applicable billing period. Such electric energy generated by the customer may be used to offset electric energy provided by GPA to the customer during the same billing period. Net-metering can result in providing a subsidy to an on-site generating customer and the transfer of certain cost burdens incurred by the utility to the utility's other customers.

P.L. 27-132 also required that the PUC promulgate rules and regulations for the implementation of the net-metering program. Public Law 29-62 states that the rate structure for the net metering program is subject to the approval of the PUC. In response to these public laws, the PUC issued an Order on May 30, 2008 initiating this proceeding, under which "net-metering" rates, rules and regulations would be established in accordance with Article 5 of GPA's enabling legislation. ¹

GPA and the PUC's independent consultant, the Georgetown Consulting Group, Inc. (GCG) initiated a collaborative effort to develop an "Interim" Net Metering Tariff. The parties presented a Workshop to the PUC on September 29, 2008, concerning their progress in developing a net metering tariff. GCG presented a draft tariff, and GPA raised concerns that the net metering program be limited to customers with usage no greater than 25kW in accordance with Public Law 27-132; and that the requirement in the draft tariff that customers maintain liability insurance was contrary to Public Law 27-132, which

¹ Staff Report on the Implementation of a "Net-Metering" Rider pursuant to the Energy Policies Act of 2005 and Guam Public Law 29-62 (prepared by Georgetown Consulting Group, Inc.) filed September 8, 2008.

stated that the utility may not require the customer to purchase additional liability insurance. ²

The parties appeared for a Regulatory Conference before Administrative Law Judge David A. Mair on December 15, 2008, and indicated that they were preparing a stipulation concerning net metering. GPA and GCG have now agreed upon a revised version of the Net Metering Tariff which addresses the concerns raised by GPA.³ Attached hereto as Exhibit "A" is the Interim Net Metering Rider for Customer - Generator Energy Facilities.

After careful consideration of the record herein and the Interim Net Metering Rider, attached hereto as Exhibit "A", for good cause shown and on motion duly made, seconded and carried by the affirmative vote of the undersigned commissioners, the Commission hereby ORDERS that:

1. The Interim Net Metering Rider for Customer-Generator Energy Facilities, attached hereto as Exhibit "A", is hereby adopted and approved by the Commission.
2. The Interim Rider is adopted by the Commission pursuant to P.L. 27-132 and P.L. 29-62, and 12 GCA §12004. Since an "interim" rate is provided for by P.L. 29-62, and is initiated by the PUC pursuant to 12 GCA §12004, the net metering rider is not subject to the provisions of the Ratepayer's Bill of Rights.
3. Nevertheless, the PUC wishes to provide the public with a full opportunity to address the Interim Net Metering Rider and will schedule a Public Hearing on this subject in the near future. The "Interim" Net Metering Rider shall not become final until the public has had a full and adequate opportunity to comment upon the Rider.
4. Since Guam law specifies a maximum limitation of 25kW per customer - generator, this limitation is and shall be included in the Interim Net Metering Rider.
5. In accordance with the recommendation of GCG, at such time as the number of customer - generators availing themselves to the

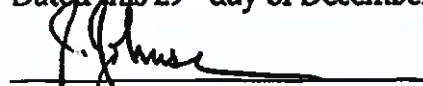
² Letter from General Manager of GPA to PUC Administrative Law Judge, dated September 17, 2008, Re: GPA Response on GCG Report Implementation of a "Net Metering".

³ E-mail from William J. Blair to PUC Legal Counsel dated December 24, 2008.


"net metering" tariff approaches one-thousand (1,000) customers, the issue of whether a limitation should be imposed by Guam on the aggregate capacity eligible for "net metering" treatment will be reviewed and examined by the PUC.

6. Since there is no limitation in P.L. 29-62 on the availability of net metering to any particular customer classes, the Interim Net Metering Rider is available to all GPA customer classifications.
7. Net metering customers may utilize any of the available technologies indicated in Public Law 27-132, including fuel cells, micro turbines, wind, biomass, hydroelectric, solar energy or a hybrid system consisting of these facilities as its primary source of fuel.
8. In accordance with the Interim Rider, net-metering customers are required to enter into a separate agreement with GPA before being eligible for the program. GPA shall, at its earliest convenience, prepare a draft Interconnection Agreement for Net Metering Facilities and submit such agreement to the PUC for review and approval.
9. GPA is ordered to pay the Commission's regulatory fees and expenses, including, without limitation, consulting and counsel fees and the fees and expenses of conducting the hearing proceedings. Assessment of PUC's regulatory fees and expenses is authorized pursuant to 12 GCA §§12002(b) and 12024(b), and Rule 40 of the Rules of Practice and Procedure before the Public Utilities Commission.

Dated this 29th day of December, 2008.




Jeffrey C. Johnson
Chairman



Joseph M. McDonald

Filomena M. Cantoria



Rowena E. Perez



Michael A. Pangelinan

Exhibit A
Net Metering Rider—NM
Interim

NET METERING RIDER FOR CUSTOMER-GENERATOR ENERGY FACILITIES

GENERAL:

To encourage private investment in renewable energy resources; stimulate economic growth; and enhance the diversification of energy resources in the Territory this Net Metering (NM) Rider for Customer-Generator Energy Facilities is offered to customers operating qualifying generation facilities. The NM Rider may be amended or modified in the future by GPA, with the approval of the Guam Public Utilities Commission (PUC),

AVAILABILITY:

The NM Rider is available to GPA customers throughout the Territory who own and operate an eligible Net Metering Facility designed to operate in parallel with GPA's distribution facilities. Existing GPA distribution facilities of adequate capacity and suitable phase and voltage must be adjacent to the Net Metering Facility of the Customer-Generator. Customers eligible for this Rider must also take service from GPA under an applicable standard service tariff. The NM Rider is offered in conjunction with the GPA's existing rate schedules for the following customer classifications:

- Schedule R—Residential Service
- Schedule G—General Service - Non Demand
- Schedule J—General Service - Demand
- Schedule P—Large Power Service
- Schedule S—Small Government Service - Non Demand
- Schedule K—Small Government Service - Demand
- Schedule L—Large Government Service
- Schedule N—Navy Service

The NM Rider is available to all customers without limitation as to the aggregate capacity of Customer-Generator installations on the GPA system. However, at that time the number of Customer-Generators exceeds one-thousand (1000) customers this issue will be reviewed by the PUC and a determination made as to the continued offering of the NM Rider for new "net metering" customers.

Provisions of applicable rate schedules with which the NM Rider is used are modified as described herein.

APPLICATION:

The NM Rider is applicable to Customer-Generator facilities which operate in parallel with the GPA system and which meet the Conditions of Service for a Net Metering Facility. Only those customers who produce electrical energy using eligible Net Metering Facilities (i.e., fuel cells, micro-turbines, wind, biomass, hydroelectric, solar energy or a hybrid system consisting of these facilities) will be eligible for this Rider. This Rider is applicable only to the net energy supplied to

(Continued on Sheet NM-2)

(Continued from Sheet NM-1)

GPA's system by the Customer-Generator. All other services furnished to the customer shall be billed in accordance with the rates and charges under the customer's applicable standard rate schedule.

CONDITIONS OF SERVICE:

For the purposes of this NM tariff, an eligible Customer-Generator must comply with all of the following requirements:

- 1) Operate and produce electric energy by fuel cells, micro-turbines, wind, biomass, hydroelectric, solar energy or a hybrid system consisting of these facilities, as its primary source of fuel;
- 2) Own and operate generation facilities located at customer premises;
- 3) Have as its primary purpose the intent of supplying a part or all of the electrical energy requirements of customer; and
- 4) Design and install facilities to operate in parallel with GPA's electric distribution system without adversely affecting the operation of the equipment and service of GPA and its customers and without presenting safety hazards to GPA and customer personnel.

The rated capacity of the Customer-Generator facilities at any single customer service location shall not exceed twenty-five (25) kilowatts.

Customer-Generators seeking to interconnect an eligible Net Metering Facility to GPA's system must submit to GPA a completed "Standard Interconnection Agreement for Net Metering Facilities," and a one-line diagram showing the configuration of the proposed Net Metering Facility.

A "Standard Interconnection Agreement for Net Metering Facilities" between GPA and the eligible Customer-Generator must be executed before the Net Metering Facility may be interconnected with GPA's system.

Customer-Generator facilities connected in parallel operation with GPA and located on customer's premises must be manufactured, installed and operated in accordance with governmental and industry standards and capable of providing single phase or three phase electric energy at 60 Hertz. The service provided under the NM Rider will be provided to the entire premise through a single point of delivery at a single voltage.

All generator equipment and installations must comply with GPA's Technical Requirements. All generator equipment shall be installed in accordance with the manufacturer's specifications as well as all applicable provisions of the National Electrical Code and state and local codes. All generator equipment and installations shall comply with all applicable safety, performance and power quality standards, established by the National Electrical Code, the Institute of Electrical and Electronic Engineers and accredited testing laboratories.

Customer-Generators shall provide GPA proof of qualified installation of the Net Metering Facility. Certification by a licensed electrician shall constitute acceptable proof.

(Continued on Sheet NM-3)

(Continued from Sheet NM-2)

Customer-Generators shall install, operate, and maintain the electric generating facility in accordance with the manufacturer's suggested practices for safe, efficient, and reliable operation in parallel with GPA's system.

Customer-Generators must provide a visibly open, lockable, manual disconnect switch, which is accessible by GPA and is clearly labeled.

GPA may, at its own discretion, isolate any electric generating facility if GPA has reason to believe that continued interconnection with the electric generating facility creates or contributes to a system of emergency.

GPA may perform reasonable on-site inspections to verify the proper installation and continuing safe operation of the Net Metering Facility and the interconnection facilities, at reasonable times and upon reasonable advance notice to the Customer-Generator.

An eligible Customer-Generator installation is transferable to other persons or service locations only upon notification to GPA and verification that the installation is in compliance with all applicable safety and power quality standards. All other conditions of service apply.

METERING:

Net energy metering shall be accomplished using a standard kilowatt-hour meter capable of measuring the flow of electricity in two (2) directions. If the existing electrical meter installed at the Customer-Generator's facility is not capable of measuring the flow of electricity in two directions, GPA shall furnish and install a standard bi-directional kilowatt-hour meter. The Customer-Generator shall provide any related interconnection equipment in accordance with GPA's technical requirements, including safety and performance standards. The Customer-Generator shall be responsible for all costs associated with the installation of a standard kilowatt-hour meter. Such Customer-Generator responsible costs include, but are not limited to, the meter socket, riser, weather head and other related equipment.

In the case where two meters are used, the reading of the meter measuring the flow of energy from the customer to GPA shall be subtracted from the reading of the meter measuring the flow of energy from GPA to the customer to obtain a measurement of net kWh for billing purposes.

Deleted §
Customer operating electric generating facilities shall maintain homeowners, commercial or other insurance providing coverage in the amount of at least one million thousand dollars (\$1,000,000) for the liability of the insured against losses or damages arising from the use of customer's electric generating facility. Customer-Generators must submit evidence of such insurance to GPA with the "Standard Interconnection Agreement for Net Metering Facilities." GPA's receipt of evidence of liability insurance does not imply an endorsement of the terms and conditions of the coverage. §

(Continued on Sheet NM-4)

(Continued from Sheet NM-3)

MONTHLY BILLING:

On a monthly basis, net metering customers shall be billed energy charges applicable under the currently effective standard rate schedule and any appropriate rider schedules including the Levelized Energy Adjustment Clause and other clauses as well as surcharges. Under this NM tariff, only the kilowatt-hour (kWh) units of a Customer-Generator's bill are affected. No excess energy credits shall reduce any fixed monthly customer or demand charges, if any.

Monthly charges for energy, and demand where applicable, to serve the customer's net or total load shall be determined according to GPA's standard service tariff under which the customer would otherwise be served, absent the customer's electric generating facility. Energy charges under the customer's standard tariff shall be applied to the customer's net energy for the billing period to the extent that the net energy exceeds zero.

If the customer's net energy is zero or negative during the billing period, the customer shall pay only the non-energy charge portions of the standard tariff bill. If the customer's net energy is negative during a billing period, the customer shall be credited in the next billing period for the kWh difference. When the customer elects no longer to take service under this Net Metering Service Tariff, any unused credit shall revert to GPA. Excess electricity credits are not transferable between customers or locations.

In no event shall the excess credit from a single month be carried forward beyond twelve (12) months as a credit against the current monthly bill. At the end of each calendar year, or in the event of termination of service under this Rider, any excess kWh credits, if any, will be granted by the customer to the GPA without compensation to the customer.

OTHER CHARGES:

The customer is responsible for all equipment and installation costs of the electric generating facility.

As specified in the "Standard Interconnection Agreement for Net Metering Facilities," the Customer-Generator must pay for a non-refundable application fee of \$50.00. This fee includes the cost of inspection of the customer's electric generating facility if GPA deems such inspection is necessary.

Should GPA determine that an interconnection study is required, GPA will advise the customer of the estimated additional cost of performing such study. Upon payment by the customer of the estimated study costs, GPA will proceed with the interconnection study to determine if installation of the customer's electric generating facility will have significant impact on GPA's distribution system.

Should construction or upgrades of GPA's system be required in order to interconnect the customer's electric generating facility, additional charges to cover costs incurred by GPA shall be determined by GPA and paid by the customer.

The customer shall pay any additional charges, as determined by GPA, for equipment, labor, metering, testing or inspections requested by the customer.

(Continued on Sheet NM-5)

(Continued from Sheet NM-4)

TECHNICAL REQUIREMENTS OF INTERCONNECTION:

The Customer-Generator shall agree to locate its Net Metering facility so as not to cause a hazard to GPA's existing distribution system. The Customer-Generator shall furnish and install equipment which will automatically isolate the Net Metering facility from GPA's system in the event of loss of GPA service as outlined in IEEE Standard 1547, "Standard for Interconnecting Distributed Resources with Electric Power Systems."

The Customer-Generator will have to acknowledge its understanding that several small systems on one line have the potential of degrading GPA's system integrity; therefore, Customer-Generator must agree to accept pursuant to the "Standard Interconnection Agreement for Net Metering Facilities" the responsibility of any electric service problems that Customer-Generator's Net Metering facility may cause.

The Net Metering Installation shall comply with the requirements specified in IEEE 1547, "Standard for Interconnecting Distributed Resources with Electric Power Systems" and other technical requirements stated herein. The Customer-Generator shall furnish and install equipment which will properly match voltage and phase and synchronize power from the Net Metering facility with GPA service. All Net Metering facilities shall maintain a current distortion level of five percent or less as defined in Table 3 Section 4.3.3. of IEEE standard 1547. The customer installed equipment must adhere to current standards and codes, including but not limited to, IEEE 929, IEEE 1547, U.L. 1741, National Electric Code, uniform building codes, and other applicable standards and codes. IEEE publications are available from the Institute of Electrical and Electronics Engineers, 433 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331 (<http://standards.ieee.org/>).

The standard IEEE 1547 contains the majority of the technical requirements necessary for interconnection; however, IEEE 1547 does not address planning, designing, operating, or maintaining a utility's distribution system and it does not identify or address all of the potential system impacts a proposed Net Metering Installation may create beyond the point of interconnection. Due to the limitations of IEEE 1547, additional technical requirements are contained herein.

To assure that the safety, reliability and power quality of the distribution system is not degraded by the interconnection of the Net Metering Installation the installation:

- 1) Shall comply with the Technical Requirements stated herein.
- 2) Any distribution system modifications and/or modifications to the Net Metering Installation identified by the Interconnection Study shall be completed.
- 3) Will be required to install correction equipment approved by GPA if the operation of the Customer-Generator's Net Metering facility adversely affects GPA's system or the quality of service supplied to other GPA customers.
- 4) Shall be operated and maintained as agreed upon by the parties.

EQUIPMENT DESIGN REQUIREMENTS:

Data for major equipment proposed by a Customer-Generator to satisfy the Technical Requirements must be submitted for review and approval by GPA with the completed Request for

(Continued on Sheet NM-6)

(Continued from Sheet NM-5)

Interconnection. To facilitate review and approval, GPA will maintain a list of Pre-certified Equipment. The List of Pre-certified Equipment will be available to Customer-Generators upon request and contains Pre-certified Equipment types, makes, and models of manufactured generating equipment and interconnection system components. This listing is based upon equipment certified by recognized national testing laboratories as suitable for interconnection with a distribution system based upon compliance with IEEE Standard 1547. Suitability for interconnection does not imply that Pre-certified Equipment may be interconnected without study to determine system impact.

The use of equipment that is not Pre-certified may delay GPA review and approval of the Customer-Generator's design. All interconnection equipment must be approved by GPA prior to being connected to its distribution system and before parallel operation is allowed.

ADDITIONAL TERMS AND CONDITIONS:

In addition to the terms and conditions set forth in GPA's applicable rate schedules and/or on file with the Guam PUC, the following requirements will be adhered to:

- 1) Customers operating Net Metering Facilities will be required to contract under the terms of a "Standard Interconnection Agreement for Net Metering Facilities."
- 2) GPA will require the customer to sign a statement certifying that the customer is a Net Metering Facility and meets the requirements established by the Guam Public Utilities Commission.
- 3) GPA shall not be liable directly or indirectly for permitting or continuing to allow the attachment of a Net Metering Facility, or for the acts or omissions of the Customer-Generator that cause loss or injury, including death, to any third party.
- 4) The Contract Period for service under the NM Rider shall be one (1) year and thereafter shall be renewed for successive one-year periods.
- 5) After the initial period, customer may terminate service under the NM Rider by giving at least sixty (60) days previous notice of such termination in writing to GPA. GPA reserves the right to terminate service under the NM Rider at any time upon written notice to customer in the event that customer violates any of the terms or conditions of the NM Rider, or operates a Net Metering Facility in a manner which is detrimental to GPA or its customers.

ANNUAL REPORTING:

GPA shall submit an annual "net-metering" report to the PUC. The report shall be submitted by April 1st of each year, and shall include the following information for the previous compliance year:

- 1) Total number of Customer-Generator facilities;
- 2) Total estimated rated generating capacity of its "net metered" Customer-Generators;
- 3) Total net kilowatt-hours received from Customer-Generators; and
- 4) Total estimated amount of energy produced by Customer-Generators.

BEFORE THE GUAM PUBLIC UTILITIES COMMISSION



IN THE MATTER OF:)
)
GUAM POWER AUTHORITY)
REQUEST FOR MODIFICATION OF)
CURRENT NET METERING RIDER [NEM])
_____)

GPA DOCKET 19-04

ORDER

INTRODUCTION

This matter comes before the Guam Public Utilities Commission ("PUC") upon the Guam Power Authority ("GPA") Petition for Modification of Current Net Metering ("NM") Rider.¹

GPA seeks approval to modify the current Net Metering Rider from providing retail rate for net metering credits to avoided cost for net metering credits, with a five-year phase-in approach.²

BACKGROUND

On December 29, 2008, the PUC approved and adopted the current Interim Rider for Customer-Generator Energy Facilities, developed by both GPA and the Georgetown Consulting Group, Inc. ("Georgetown").³ On February 27, 2009, the PUC approved and adopted GPA's Standard Interconnection Agreement for Net Metering Facilities, as well as GPA's Net Metering Program Interconnection Policy.⁴ On December 10, 2015, the PUC approved and adopted a language change to the Net Metering Rider under "MONTHLY BILLING" to allow unused kWh credits to be carried forward each month until the end of a twelve (12) month period where the account would be "trued-up" and the customer could elect to have the credits carry forward or have GPA purchase the remaining credits at a one-to-one retail rate; if no election was made, GPA must credit the customer's account with any and all unused kWh credits.⁵

In the December 29, 2008 Order, the PUC stated that "The NM Rider may be amended or modified in the future by GPA, with the approval of the Guam Public

¹ GPA Petition for Modification of Current Net Metering Rider, GPA Docket 19-04, filed October 4, 2018.

² *Id.* at p. 1.

³ PUC Decision and Order, GPA Docket 08-08, p. 2 (Dec. 29, 2008).

⁴ PUC Decision and Order, GPA Docket 08-10, p. 1 (Feb. 27, 2009).

⁵ PUC Decision and Order, GPA Docket 08-10, p. 7 (Dec. 10, 2015).

Utilities Commission (PUC)."⁶ The Order also stated that "The NM Rider is available to all customers without limitation as to the aggregate capacity of Customer-Generator installations on the GPA System. However, at the time the number of Customer-Generators exceeds one-thousand (1000) customers this issue will be reviewed by the PUC and a determination made as to the continued offering of the NM Rider for new 'net metering' customers."⁷

GPA reached 1,000 net energy metering ("NEM") customers in June 2016.⁸ As of August 2018, GPA's net metering customer total reached 1,764, which GPA calculates results in an approximate annual subsidy of \$3,456,653.00.⁹

At the behest of the Consolidated Commission on Utilities ("CCU"), GPA held several public meetings to: "1) Address net metering stakeholders' concerns and obtain feedback; 2) Evaluate stakeholder feedback; 3) Perform analysis regarding net metering impacts on the GPA especially on non-net metering customers; and 4) Propose recommendations on whether or not changing the current net metering program is in the best interests of customers while insofar as possible alleviating net metering customer concerns."¹⁰

GPA presented its net metering credit recommendation to the CCU on August 28, 2018. GPA recommended "the following Value of Solar (VOS) Policies as a replacement for the existing Net Metering Program including: 1) Grandfathering existing registered NEM customers for a period of 5 years allowing customers who own NEM system to recover their investment while phasing in VOS rates over the extended 5-year period; and filing for PUC approval a process to establish Value of Solar (VOS) rates."¹¹

Per GPA, the Value of Solar ("VOS") rates would be established through the following process: "1) Reassess VOS rates each LEAC for Avoided Energy Value; 2) Reassess VOS rates for other VOS components as applies on a) an annual basis; b) periodic basis over a set number of years; and 3) whenever there are material changes to GPA's generation mix."¹²

⁶ PUC Order, GPA Docket 08-10, dated December 29, 2008, at Exhibit A, Paragraph 1.

⁷ PUC Order, GPA Docket 08-10, dated December 29, 2008, at Exhibit A, Paragraph 3.

⁸ Guam Consolidated Commission on Utilities Resolution No. 2018-17, Authorizing Management of the Guam Power Authority to File Net Metering Program Recommendations Addressing the Guam Public Utilities Commission Order Docket No. 08-10 (December 29, 2008), Exhibit A, Paragraph 3, adopted August 28, 2018, at p. 1.

⁹ GPA Petition for Modification of Current Net Metering Rider, GPA Docket 19-04, filed October 4, 2018, at p. 1.

¹⁰ CCU Resolution No. 2018-17, Authorizing Management of the Guam Power Authority to File Net Metering Program Recommendations Addressing the Guam Public Utilities Commission Order Docket No. 08-10 (December 29, 2008), Exhibit A, Paragraph 3, adopted August 28, 2018, at p. 2.

¹¹ Id.

¹² Id.

On August 28, 2018, the CCU adopted Resolution No. 2018-17, which authorized GPA to file a petition regarding its Value of Solar Policy Recommendation with the PUC and to conduct an information campaign supporting the recommendations.¹³

After receiving GPA's petition on October 4, 2018, on behalf of the PUC, the Administrative Law Judge ("ALJ") of the PUC retained Daymark Energy Advisors ("Daymark") to conduct an independent review of GPA's application, review net metering tariffs across the United States, and provide a report of findings and recommendations regarding whether GPA's proposed net metering credit change should be approved.

DETERMINATIONS

The Guam Legislature's enacting of GPA's net metering statutory scheme was done "to combine new power-generation technologies with traditional power-generation systems in order to expand and safeguard the island's electric supply, without the need for additional capital investment by the utility company."¹⁴ Additionally, the Legislature unequivocally expressed its intent to "(a) encourage private investment in renewable energy resources; (b) stimulate economic growth; and (c) enhance the continued diversification of the renewable energy resources used on Guam."¹⁵

Regarding distributed solar, Daymark stated in its Report that "Distributed solar is a good resource for the island that adds to its resource diversity and has the potential to provide distribution locational benefits. Discouraging it is not ideal. It is important to properly design a tariff that supports distributed solar while increasing the knowledge of its real and full benefits and costs across the utility service chain (generation, transmission and distribution)."¹⁶

Daymark recommended that the PUC reject GPA's proposal because it will not encourage the growth of renewables at the customer level, as the Legislature had intended, the proposal framework will increase the payback period since most NEM customers are leasing generators and receiving smaller bill reduction benefits, and most states in the U.S. are still crediting NEM customers at the full retail rate.¹⁷

Instead of changing the credit rate, Daymark recommended that the level of penetration be changed from 1000 net metering customers to an aggregate kilowatt

¹³ *Id.*, at pp. 2-3.

¹⁴ Public Law 27-132, at p. 2 (Dec. 30, 2004).

¹⁵ *Id.*

¹⁶ Daymark Energy Advisors, Net Metering Review: GPA Request to Modify Current Net Metering Rider, March 20, 2019, at p. 1.

¹⁷ *Id.*, at p. 2.

("kW") cap of 10%, based on GPA's system peak demand, 261 megawatts ("MW")¹⁸, from August 1, 2017.¹⁹

Based on the 2017 peak demand and the currently installed kW of customer-generators, 18,894 kW²⁰ or about 19 MW as of October 2018, the level of penetration is about 7% of GPA's system peak demand.²¹

Daymark stated that even though the current penetration level is about 7% of the total GPA system peak demand, customer-generators are not contributing most of their output at the time the GPA's system peaks²², which GPA shows is between 1800 and 1900 hours.²³

While the 10% aggregate cap proposed by Daymark is higher than many of the U.S. states with similar cap limits, Daymark stated that the setting of this cap will enable GPA to conduct a distribution system impact study, which GPA stated would be completed in 2019²⁴, to gain a deeper understanding of locational and overall benefits and costs that customer-generators have on the distribution system.²⁵

As additional support for increasing the level of penetration cap, Daymark stated that Hawaii did not start experiencing circuit level issues until penetration reached 10% and the number of customer-generator installs in Guam have been declining since the end of 2017, even though distributed generation costs have been decreasing.²⁶

The PUC should establish a new level of penetration in the NM Rider upon which the PUC will be required to undertake a review of the net-metering program.

The NM Rider should be amended as follows. In accordance with the Daymark recommendation, the following provision of the Net Metering Rider should be deleted: "However, at that time the number of Customers exceeds one-thousand (1000) customers this issue will be reviewed by the PUC and a determination made as to the continued offering of the NM Rider for new "net metering" customers."

¹⁸ GPA Work Session, at p .6 (Apr. 19, 2018).

¹⁹ Daymark Energy Advisors, Net Metering Review: GPA Request to Modify Current Net Metering Rider, March 20, 2019, at p. 2.

²⁰ GPA's October 2018 Net Metering Report.

²¹ Daymark Energy Advisors, Net Metering Review: GPA Request to Modify Current Net Metering Rider, March 20, 2019, at p. 2.

²² *Id.*

²³ GPA Petition for Modification of Current Net Metering Rider, Exhibit A, at p .8, GPA Docket 19-04, filed October 4, 2018.

²⁴ Technical Session between the ALJ, Daymark, and GPA (Jan. 17, 2019).

²⁵ Daymark Energy Advisors, Net Metering Review: GPA Request to Modify Current Net Metering Rider, March 20, 2019, at pp. 2-3.

²⁶ *Id.*, at p. 3.

In place of the deleted provision, the following amendment should be added to the NM Rider:

“However, when the capacity of Customer-Generator installations on the GPA system exceeds an aggregate KW cap (10%) of the utility’s system peak demand (261 MW), the PUC will review the net metering program, determine whether the NM Rider should continue to be offered for new “net metering” customers, and consider whether any other adjustments should be made to compensation rates paid by GPA to customer-generators for capacity generation.”

Regarding GPA’s planned distribution system impact study, Daymark recommended that as part of this study GPA should conduct a full, balanced benefit-cost analysis that would analyze all impacts distributed generation has on the distribution system, which will enable GPA to more fully consider avoided costs and benefits that are used in the VOS rate calculation, which should also consider the change in fuel costs due to the renewable generation GPA is bringing online in the next few years.²⁷

This kind of study is an important consideration because GPA’s distribution system has not been designed to include customer-generators.²⁸

Once GPA conducts a full distribution study benefit-cost analysis that analyzes all impacts of locational distributed generation has on the distribution system and the aggregate kW cap is reached, Daymark recommends the NM Rider be re-opened for discussion of program and rate changes.²⁹

Until then and going forward, Daymark recommends that GPA include a rebate program for battery storage in their Demand-Side Management (“DSM”) program and encourage solar providers to include storage with the solar system and explain the benefits to customers.³⁰

The addition of a storage system will allow customer-generators to store net excess generation during the day for use in helping GPA meet and reduce daily peak system demand occurring in the evening, which reduces the need for new resource investment to the benefit of all customers.³¹

To address the lost revenue GPA has calculated, Daymark recommends GPA include it

²⁷ *Id.*, at pp. 3-4.

²⁸ *Id.*, at p. 3.

²⁹ *Id.*, at p. 4.

³⁰ *Id.*, p. 3.

³¹ *Id.*

in its next base rate case filing.³²

The ALJ conducted his own independent review of the Daymark Report and filed his ALJ Report in this Docket. The ALJ concurs with the findings and recommendations of the Daymark Report. The PUC also adopts the findings and conclusions of the ALJ Report.

ORDERING PROVISIONS

After review of the record herein, GPA's Petition for Review and Approval by the PUC for Modification of Current Net Metering Rider, the Daymark Report, and the ALJ Report, for good cause shown, on motion duly made, seconded and carried by the undersigned Commissioners, the Guam Public Utilities Commission **HEREBY ORDERS** that:

1. GPA's request to modify the current Net Metering Rider from providing retail rate for net metering credits to avoided cost for net metering credits, with a five-year phase-in approach, as set forth in its Petition, is denied.
2. The PUC should establish a new level of penetration in the NM Rider upon the occurrence of which the PUC will be required to undertake a review of the net-metering program.
3. The NM Rider cap is hereby amended to be changed from a customer cap of 1000 net metering customers to an aggregate kW cap set at 10% of GPA's August 1, 2017 system peak demand of 261 MW.
4. The NM Rider should be amended as follows. In accordance with the Daymark recommendation, the following provision of the Net Metering Rider should be deleted: "However, at that time the number of Customers exceeds one-thousand (1000) customers this issue will be reviewed by the PUC and a determination made as to the continued offering of the NM Rider for new net metering customers."
5. In place of the deleted provision, the following amendment should be added to the NM Rider:


"However, when the capacity of Customer-Generator installations on the GPA system exceeds an aggregate KW cap (10%) of the utility's system peak demand (261 MW), the PUC will review the net metering program, determine whether the NM Rider should continue to be offered for

³² Id.

new “net metering” customers, and consider whether any other adjustments should be made to compensation rates paid by GPA to customer-generators for capacity generation.”

- 6. GPA may petition the PUC for further changes to the NM Rider, including the rate of compensation paid to net metering customers, prior to the time at which the aggregate KW cap (10%) of the utility’s system peak demand is met, but only if it has met all of the following preconditions: (1) the distribution system impact study which GPA has already planned shall be completed; (2) GPA shall have conducted and completed a full, balanced benefit-cost analysis that analyzes all of the impacts distributed generation has on the distribution system, especially specific to the location of the distributed generation on the system; (3) A third-party consultant, undertakes and completes an independent study determining the cost of grid and other services used by NEM customers and which identifies, in detail, the specific value of those services to the NEM customers. The studies referenced in (2) and (3) above shall only be undertaken upon joint approval of the PUC and GPA, and shall be undertaken at the expense of GPA.**
- 7. GPA is ordered to complete the planned distribution system impact study and include in that study a balanced locational and full benefit-cost analysis of how distributed generation impacts the distribution system.**
- 8. GPA is ordered to include a rebate program for battery storage in the DSM program and encourage solar providers to include storage with the solar systems and explain the benefits to customers.**
- 9. If GPA is concerned about lost revenue, it should provide appropriate evidence during its next filed base rate case.**


Dated this 30th day of May, 2019.



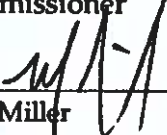
Jeffrey C. Johnson
Chairman



Joseph M. McDonald
Commissioner



Filomena M. Cantoria
Commissioner

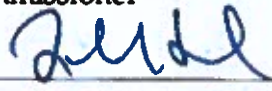


Mark Miller
Commissioner



Rowena E. Perez
Commissioner

Michael A. Pangelinan
Commissioner



Peter Montinola
Commissioner



CONFIDENTIAL

**NET METERING REVIEW: GUAM
POWER AUTHORITY REQUEST
FOR MODIFICATION OF
CURRENT NET METERING RIDER**

MARCH 20, 2019

PREPARED FOR
Guam Public Utility Commission

PREPARED BY
Daymark Energy Advisors

DAYMARK ENERGY ADVISORS
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Exhibit "3"

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III.1 Level of Penetration

When net metering tariffs were first developed, they typically included language that set an aggregate³⁹ cap on the amount of DG systems that could be interconnected at that rate based on a percentage of a utility's peak demand. The aggregate cap limits, as well as caps on system sizes differ by state, by type of customer, by utility-type (i.e., investor-owned utility, municipal, or cooperative), and by type of DG system. Table 6 through Table 10 in Appendix A provide state-specific information on the solar penetration levels set by state regulatory agencies, which define the capacity limits imposed on both individual systems and systems in aggregate. It is important to note that some states (Arizona, Maryland,⁴⁰ New Jersey, Rhode Island,⁴¹ and Virginia) mandate that systems be sized such that the energy production will not exceed, or will mostly meet, the customer's on-site annual energy consumption.

When an aggregate cap is reached or is approaching a its limit, Commissions, state legislatures, and utilities have sought legislation or made filings to address the next phase of net metering. As the costs of solar DG systems have come down over the last several years, and with tax incentives from local and federal governments, the level of penetration of net metered solar has risen. This has led to net metering program cap limits in many states being reached, or reconsidered, prompting an examination of net metering tariffs to evaluate rate design and rate structures.

In Guam, the penetration of systems under GPA's net metering rider has seen increased growth since the inception of the program in 2009. Figure 5 depicts the cumulative growth of GPA's net metering customer-generators.⁴² While hard to see in the figure, FY18 has not seen the same high growth as previous years. During our Technical Session⁴³ with GPA, the Company confirmed as much and indicated that it is likely due to the tax law change and due to the idea that customers who could afford systems have

³⁹ Includes all net metering customers in both residential and commercial classes.

⁴⁰ Limited to that needed to meet 200% of annual baseline customer electricity usage.

⁴¹ Systems must be sized to produce no more than an average of three years of annual consumption of energy at the account.

⁴² GPA PUC Filing, Docket 08-10-Filing of Net Metering Data, March 30, 2018.

⁴³ Technical Session held Thursday, January 17, 2019 at 9am.

already purchased them. This effectively, per GPA, leaves the market mainly open to third party power purchase agreements (leasing of systems).

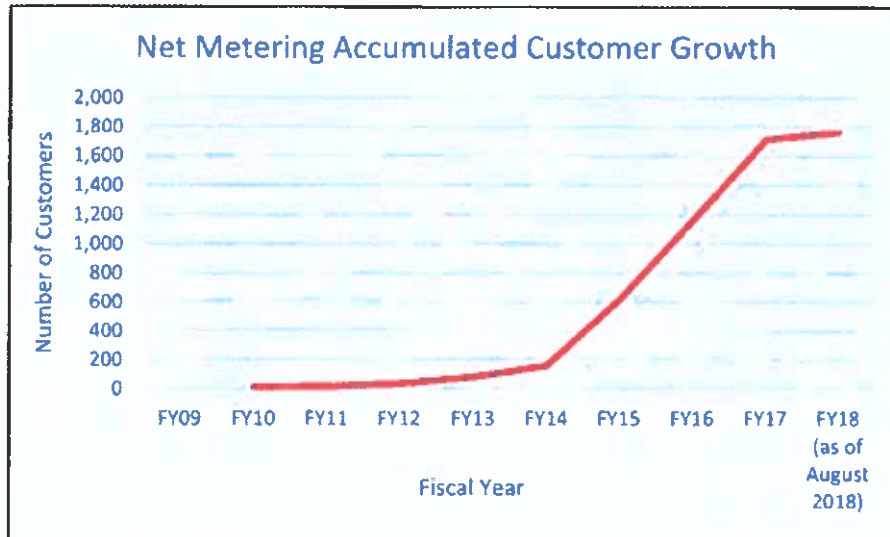


Figure 5. GPA NEM Accumulated Customers

Besides examining the level of customer penetration in Guam, we used net metering data from the last five years to analyze the impact of net metering around the United States. Figure 6 below shows the cumulative net metering capacity and customer penetration in the Pacific Region. Figures for the other four regions defined earlier – Frontier, Midwest, Northeast, and South – can be found in Appendix A.

Pacific Region

In the Pacific Region, California has the highest penetration followed closely by Arizona and Hawaii. However, year over year additions were not significantly high in any state other than California. As noted earlier, the island territories of Guam and Puerto Rico are included with the Pacific Region. Guam has a shown a big increase in capacity additions,

but still has nowhere near the same levels of capacity additions and number of net metering customers as its fellow islands.

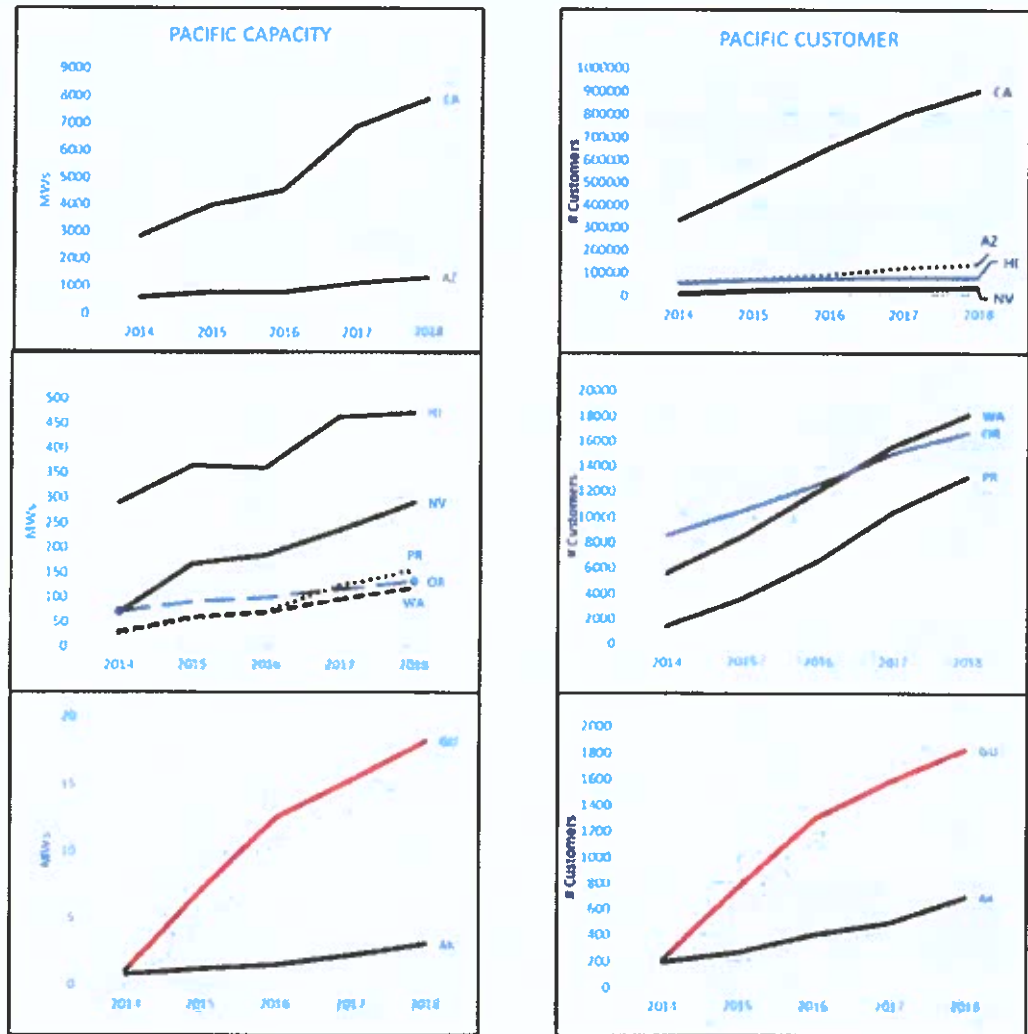


Figure 6. Pacific Region Net Metering System Capacity and Customer Growth⁴⁴

⁴⁴ Data provided from the NC Clean Energy Technology Center, *50 States of Solar Q3 2018 Quarterly Report*, NC Clean Energy Technology Center, October 2018.

Table 5 below shows the system and aggregate capacity limits for each state in the Pacific Region. Tables showing this information for the other four regions can be found in Appendix A.

Table 5. System and Aggregate Capacity Limits (Pacific Region) ^{45,46}

State	System Capacity Limit	Aggregate Capacity Limit
WA	100 kW	0.5% of utility's 1996 peak demand
OR	<ul style="list-style-type: none"> • PGE and PacifiCorp customers: 2 MW for non-residential and 25 kW for residential • Other customers: 25 kW for all customers 	Discretionary cap: 0.5% of utility's historic single-hour peak load
CA	<ul style="list-style-type: none"> • 100% of customer's annual load • 5 MW for systems operating under the bill credit transfer program authorized by Public Utilities Code 2830; system must be owned by, operated by, or on property under the control of, a local government or university 	N/A
NV	Lesser of 1 MW or 100% of the customer's annual requirements for electricity	80 MW for Assembly Bill 405 net metering
AZ	No capacity limit specified, but system must be sized to meet part or all of customer's electric load and may not exceed 125% of customer's total connected load	No limit specified
AK	25 kW	1.5% of average retail demand
HI	<ul style="list-style-type: none"> • 100 kW for HECO, MECO, HELCO customers • 50 kW for KIUC customers 	Separate limits exist for each island and each of the two tariffs
PUERTO RICO	<ul style="list-style-type: none"> • 5 MW for non-residential connected to transmission or sub-transmission lines per Act 103 of 2012 • 1 MW for non-residential connected to distribution lines; 25 kW for residential 	No limit specified
GUAM	25 kW	1,000 customers

Summary

Investigating the trends within each region highlights the various stages of net metering development and penetration across the states. While it is true that states with the highest penetration levels have made modifications to their net metering tariffs or have

⁴⁵ Puerto Rico and Guam are U.S. Territories.

gone on to successor tariffs, many other states that have seen lower penetration levels comparatively, have also begun modifying their net metering tariffs.

As penetration levels increase, there are several challenges that utilities, providers, and system operators indicate must be addressed to ensure continued reliable and safe supply of power. Among these are changes to the grid structure and associated engineering and cost concerns and issues of cost-allocation and cross-subsidization among customers who use distributed generation from their premises and customers who receive electricity from provider. The increasing penetration levels make it necessary to plan for future growth and changes in the power system architecture while addressing the costs and benefits of distributed generation. Therefore, it has been increasingly necessary to understand what modifications to net metering rules and regulations that higher levels of DG penetration may require for efficient and reliable operation of the grid. Several states have already begun studies to examine the impacts of DG in order to enable them to make decisions about how to modify rate structures to capture the costs and reflect the benefits of DG, especially as penetration levels continue to rise.

For more information about the other regions, please see Appendix A.

III.2 Cost Shifting from NEM to Non-NEM Customers

In this docket, GPA reported that an approximate annual subsidy (cost shift) of \$3,456,653 has been created due to net metering customers not paying their fair share of costs, which comes at the expense of non-NEM customers. To eliminate this subsidy in future years, GPA is proposing to decrease the annual net metering subsidy evenly over a five-year period beginning in CY19 by effectively reducing the credit (\$/kWh), moving it from \$0.1006 per kWh to zero over five years. At the end of this transition, the transitional Value of Solar rate (credit to excess generation) would become the avoided cost rate, which going forward would be set annually by the GPUC in a similar protocol to the LEAC.

Cost shifting from customers participating under a net metering tariff to similar customers (i.e., customers in the same rate class) not participating under the net metering tariff has been an issue that utilities and legislatures in several states have tried to address, especially as penetration levels of net metering systems and customers have exponentially increased. This issue has arisen because net metering customers are able

⁴⁶ System and aggregate capacity limits are mostly from state-specific net metering programs discussed on <http://www.dsireusa.org/>.

IV.2 Recommendations

The Commission should continue to *support the Legislature's policy-based decision to encourage the growth of renewables at the customer level*¹⁰⁹; the following set of recommendations will enable that goal.

The Commission should reject GPA's proposal.

- Distributed solar is a good resource for the island that adds to its resource diversity and has the potential to provide distribution locational benefits. Discouraging it is not ideal. It is important to properly design a tariff that supports distributed solar while increasing the knowledge of its real and full benefits and costs across the utility service chain (generation, transmission and distribution).
- Most of the customer-generators installed on-island are not owned by the customers. Installation companies allow the customers to finance the systems at zero down for a 25-year period – however, most of the bill reduction currently goes to the installer. This framework ultimately increases the payback period for such systems that cannot be addressed by the 5-year phase-in to a value of solar rate proposed by GPA.
- Additionally, most of the states in the U.S. are still crediting customers at or near the full retail rate.

The Commission should amend the level of penetration to be an aggregate kW cap (10%) based on the utility's system peak demand (261 MW).

- Across the United States, the aggregate capacity limit has varied by state, and in some cases, by utility. Limits range from 0.1% to up to 20% of a utility's peak demand (either from the previous year or from a specific year). Some states like Utah¹¹⁰ and Maryland¹¹¹ have cap limits at or over 10% of peak demand.
- GPA's peak demand was 261 MW on August 1, 2017.¹¹²

¹⁰⁹ Docket No. 08-10, Order from December 10, 2015, states "The Legislature also unequivocally expressed its intent to '(a) encourage private investment in renewable energy resources; (b) stimulate economic growth; and (c) enhance the continued diversification of the renewable energy resources used on Guam.'" This is in reference to Public Law 27-132, p.2, December 30, 2004.

¹¹⁰ 20% of 2007 peak demand for Rocky Mountain Power.

¹¹¹ Approximately 10% of the 2014 peak demand.

¹¹² GPA Work Session, April 19, 2018, p. 6. <http://guamccu.org/wp-content/uploads/2018/04/GPAWS-4.19.18.pdf>.

- According to the Net Metering Report from October 2018, the cumulative total installed kW of customer-generators from 2009 through 2018 is 18,894 kW (about 19 MW).¹¹³
- Based on the 2017 peak demand, the current installed kW of customer-generators amounts to about 7% of the total system peak demand. However, this assumes the customer-generators are contributing 100% of their output at the time of the peak. Since the peak demand occurs in the evening (between 8 pm and 9 pm), this added capacity is typically not, if at all, contributing to that peak.
- So, while this percentage is slightly higher than average (for the states that have limits imposed), the Commission should consider setting the limit higher – to 10%. Doing so would allow GPA time to conduct its distribution system impact study¹¹⁴, which the Company has indicated will happen in 2019, to better understand the locational and overall benefits and costs of customer-generators on its distribution system.
- This increased cap is supported by:
 - It was not until customer generator penetration levels in Hawaii on Oahu reached 10% that the Hawaiian Electric (“HECO”) reached a point where there was concern about circuits that led to HECO seeking a new approval policy for rooftop solar.¹¹⁵
 - The fact that the number of customer-generator installs has been declining since the end of 2017, even though the costs of DG have continued to decrease.

The Commission should require GPA to include a rebate program for battery storage in the Demand-Side Management (“DSM”) program and encourage solar providers to include storage with the solar systems and explain the benefits to customers. When the NEM Tariff is reviewed again, the Commission should consider eliminating just the solar program and consider only solar plus storage in the future.

- Since the distribution system peak occurs later in the day when the customer-generator is not producing, the added storage system will allow

¹¹³ GPA Response to RFI IR-1, October Net Metering Report.

¹¹⁴ Stated by GPA during the Technical Session held Thursday, January 17, 2019 at 9am.

¹¹⁵ *How Much Solar Can HECO and Oahu’s Grid Really Handle?, Testing the limits of a large island’s electrical grid with 10 percent PV penetration*, by Eric Wesoff, February 10, 2014.
<https://www.greentechmedia.com/articles/read/how-much-solar-can-heco-and-oahus-grid-really-handle#gs.1ht5m5>.

Table 10. System and Aggregate Capacity Limits (Frontier Region)¹¹⁷

State	System Capacity Limit	Aggregate Capacity Limit
MT	50 kW	No limit specified
ID	<ul style="list-style-type: none"> • 100 kW (Avista) • 25 kW for residential and small commercial • 100 kW for all others (Idaho Power) • 100 kW for non-residential; 25 kW for residential and small commercial (RMP) 	<ul style="list-style-type: none"> • 0.1% of Avista's peak demand in 1996 (in Idaho) • None (Idaho Power) • None (RMP)
WY	25 kW	No limit specified
UT	2 MW for non-residential; 25 kW for residential	20% of 2007 peak demand for Rocky Mountain Power; 0.1% of utility's 2007 peak demand for co-ops
CO	<ul style="list-style-type: none"> • IOU¹¹⁸ customers: 120% of the customer's average annual consumption • Municipality and co-op customers: 25 kW for non-residential; 10 kW for residential 	<ul style="list-style-type: none"> • No limit specified • Community solar gardens: 6 MW/year for 2011-2013; set by Commission thereafter
NM	80 MW	No limit specified
KS	<ul style="list-style-type: none"> • Before July 1, 2014: 200 kW for non-residential and schools; 25 kW for residential • On or after July 1, 2014: 100 kW for non-residential; 15 kW for residential; 150 kW for schools 	1% of utility's retail peak demand during previous year
OK	100 kW or less; 25,000 kWh/year or less	No limit specified
TX	<ul style="list-style-type: none"> • For most customer-generators: 50 kW or 100% of estimated/actual electricity consumption, whichever is less • 100 kW, can be more (Entergy) • ≤ 20 kW (non-residential renewable energy systems) and ≤ 20 kW (residential PV) (Austin Energy) 	No limit specified

¹¹⁷ System and aggregate capacity limits are mostly from state-specific net metering programs discussed on <http://www.dsireusa.org/>.

¹¹⁸ Investor Owned Utility.

Table 11. System and Aggregate Capacity Limits (Midwest Region)^{120,121}

State	System Capacity Limit	Aggregate Capacity Limit
ND	100 kW	No limit specified
NE	25 kW	1% of utility's average monthly peak demand
MN	<ul style="list-style-type: none"> • Net Metering Facility: 1 MW • Community Garden Project: 5 MW 	<ul style="list-style-type: none"> • No limit specified • Commission *may* limit cumulative net metering generation once generation has reached 4% of annual retail electricity sales
MI	150 kW	0.75% of utility's peak load during previous year
IA	1 MW	No limit specified
IL	2 MW	5% of utility's peak demand in previous year
MO	100 kW	<p>Total cap: 5% of utility's single-hour peak load during previous year</p> <p>Annual cap: 1% of a utility's single-hour peak load for the previous calendar year</p>
IN	1 MW	1.5% of utility's most recent peak summer load (new DG compensation mechanism after this is reached)
OH	No capacity limit specified, but system must be sized primarily to offset part or all of customer's electricity requirements	No limit specified
WI	20 kW (some utilities allow larger systems to net meter)	No limit specified

¹²⁰ South Dakota does not have a net metering program.

¹²¹ System and aggregate capacity limits are mostly from state-specific net metering programs discussed on <http://www.dsireusa.org/>.

Table 12. System and Aggregate Capacity Limits (Northeast Region)¹²³

State	System Capacity Limit	Aggregate Capacity Limit
MD	<ul style="list-style-type: none"> • 2 MW (30 kW for micro-CHP) • Limited to that needed to meet 200% of annual baseline customer electricity usage 	<ul style="list-style-type: none"> • 1,500 MW (~10% of 2014 peak demand) • As of June 2018, 700 MW net metered systems has been installed, reaching 52% of the cap
DC	<ul style="list-style-type: none"> • 1 MW • 5 MW limit for community renewable energy facilities 	No limit specified
DE	<p>System capacity can be up to 110% of customers 12 months of historical energy consumption up to:</p> <ul style="list-style-type: none"> • Non-residential Delmarva Customers: 2 MW • Non-residential coop and muni customers: 500 kW • Residential customers: 25 kW • Farm Customers: 100 kW (can be subject to an appeal and case-by-case determination by Delaware Energy Office which may grant exceptions to this limitation in accordance with Title 26, section 1014(d)(1)b) 	5% of Electric Supplier's aggregated customer monthly peak demand (utilities may increase limit)
PA	<ul style="list-style-type: none"> • 50 kW for residential • 3 MW for non-residential • 5 MW for micro-grid and emergency systems 	No limit specified
NJ	System must be sized so that energy production does not exceed customer's annual on-site energy consumption	No limit specified but Commission may limit to 5.8% total annual kWh sold in the state by each electric power supplier during prior one year period
NY	<ul style="list-style-type: none"> • Solar: 25 kW for residential; 100 kW for farms; 2 MW for non-residential • Wind: 25 kW for residential; 500 kW for farm-based; 2 MW for non-residential • Micro-hydroelectric: 25 kW for residential; 2 MW for non-residential 	<ul style="list-style-type: none"> • No specific aggregate capacity limit. • It was previously set at 6% of utility's 2005 demand for solar, farm-based biogas, fuel cells, micro-hydroelectric, and residential micro-CHP,

¹²³ System and aggregate capacity limits are mostly from state-specific net metering programs discussed on <http://www.dsireusa.org/>.

State	System Capacity Limit	Aggregate Capacity Limit
	<ul style="list-style-type: none"> Fuel Cells: 10 kW for residential; 1.5 MW for non-residential Biogas: 2 MW (farm-based only) Micro-CHP: 10 kW (residential only) 	and 0.3% of utility's 2005 demand for wind.
CT	<ul style="list-style-type: none"> Standard net metering: 2 MW Virtual net metering: 3 MW 	No limit specified but the net metering program is scheduled to end
RI	<ul style="list-style-type: none"> 10 MW (effective September 2016) Systems must be sized to produce no more than an average of three years of annual consumption of energy at the account 	<ul style="list-style-type: none"> 3% of peak load for Block Island Power Company and Pascoag Utility District National Grid: No aggregate cap
MA	<ul style="list-style-type: none"> 10 MW for net metering by a municipality or other governmental entity 2 MW for all other "Class III" systems 1 MW for all other "Class II" systems 60 kW for all other "Class I" systems 	<ul style="list-style-type: none"> 7% of utility's peak load for private entities 8% of utility's peak load for municipalities or government Systems 10 kW and under on a single-phase circuit and systems 25 kW and under on a three-phase circuit are exempt from the private aggregate capacity limit
VT	<ul style="list-style-type: none"> 2.2 MW for military systems 20 kW for micro-CHP 	No limit specified
NH	1 MW	100 MW
ME	<ul style="list-style-type: none"> 660 kW for IOU customers 100 kW for muni and co-op customers (may voluntarily offer participation for systems up to 660 kW) 	No limit specified

Table 13. System and Aggregate Capacity Limits (South Region)^{125, 126}

State	System Capacity Limit	Aggregate Capacity Limit
AR	<ul style="list-style-type: none"> Residential: Capped at 25 kW or, at 100% of the customers highest monthly usage in the previous 12 months Commercial: 300 kW (unless other allowed by the Commission) 	No limit specified
LA	<ul style="list-style-type: none"> Commercial and agricultural: 300 kW Residential: 25 kW Systems larger than 300 kW will be evaluated by the Commission on a case-by-case basis 	0.5% of retail peak demand
MS	<ul style="list-style-type: none"> Residential: 20 kW (DC) Non-residential: 2 MW (DC) 	3% of the utility's total system peak demand recorded during the prior calendar year
FL	2 MW	No limit specified
GA	<ul style="list-style-type: none"> 10 kW for residential 125% of demand for commercial 	0.2% of utility's peak demand during previous year
SC	20 kW for residential; 1000 kW for non-residential	2% of average retail peak demand for previous 5 years
NC	<ul style="list-style-type: none"> Customer-owned systems: 1 MW Leased Photovoltaic Systems (Residential): Lesser of 20 kW or 100% of estimated demand Leased Photovoltaic Systems (Nonresidential): Lesser of 1,000 kW or 100% of contract demand 	<ul style="list-style-type: none"> Customer-owned Systems: No limit specified Leased Photovoltaic Systems: 1% of the utility's previous five-year average coincident retail peak demand Community Solar Projects: Statewide limit of 20 MW
KY	30 kW	1% of utility's single-hour peak load during previous year
WV	<ul style="list-style-type: none"> IOUs with more than 30,000 customers: 2 MW for industrial; 500 kW for commercial; 25 kW for residential IOUs with fewer than 30,000 customers, municipal utilities and co-ops: 50 kW for commercial and industrial; 25 kW for residential 	3% of peak demand during the previous year

¹²⁵ Alabama and Tennessee do not have a net metering program.

¹²⁶ System and aggregate capacity limits are mostly from state-specific net metering programs discussed on <http://www.dsireusa.org/>.

State	System Capacity Limit	Aggregate Capacity Limit
VA	<ul style="list-style-type: none">• Residential: 20 kW• Non-residential: 1,000 kW• Agricultural: 500 kW (aggregated capacity)• Systems must be sized not to exceed customers annual load	1% of utility's adjusted Virginia peak-load forecast for the previous year
