



**DYNAMIC  
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# DEN Comments on PREC Regulation on Microgrid Development

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## **DEN COMMENTS ON PREPOSED RULES**

Comments are listed by section number.

1.08.B.1.iv: Fuel cells operating on while fuels? Are fuel cells operating on natural gas still considered Alternative Renewable Energy?

1.08.B.2: the phrase, "...services necessary to support the delivery of electric power from generator to consumer..." seems confusing in the context of behind-the-meter (BTM) microgrids and distributed energy resources. Does PREC intend to regulate the delivery of services BTM to consumers BTM from generators BTM? Typically, the term, ancillary services, refers to the services that management of power quality at the grid level, not behind the meter.

1.08.B.3: Please clarify what "sequential use of energy" means.

1.08.B.8: Please clarify that "Distributed Generator" refers to an entity not a physical device.

1.08.B.12: Is it the intention of the rules to include distributed generation and microgrids behind the meter? Does the context change if there is no energy supplied to the distribution or transmission grid?

1.08.B.17: The term "Electric Service Company" seems to be very similar to the term "Electric Power Generation Company" (1.08.B.12) and "Energy Producer" (1.08.B.15). What are the nuances that provide differences between these entities?

1.08.B.20: Suggest adding, "provided to Distribution Infrastructure (1.08.B.9) and Electric Power Distribution (1.08.B.11)" between "...other services" and "such as...".

1.08.B.24: In the last sentence, move the comma from after "required" to after "to".

1.08.B.29: This definition seems to equate PPA with "take or pay" or "take and pay" energy transaction concepts. Does the commission contemplate other forms of PPA that are not "take or pay" in nature? Does the commission seek other forms of these bi-lateral agreements to use a different name?

2.01.B: While the term "Partnerships" is included it is not clear if this term extends to Public-Private Partnerships, commonly referred to as P3. Please clarify.

2.01.C.1: Does the individual system include all sizes? A 4 kW residential Solar PV system and a 20 MW industrial site generator are both individual systems.

2.01.E.2: How does this "small cooperative systems" definition differ from the "small systems" definition of 2.01.C.2? Or, if it is the same, then would it be best to use the same name?

2.01.E.3: How does this “large cooperative systems” definition differ from the “large systems” definition of 2.01.C.3?

2.01.E.6: Why are the requirements for systems owned by PREPA outside the scope of this Regulation? Shouldn’t the same standards around safety and operations apply? In the Purpose and Executive Summary (1.03), the Commission seeks to “assist in the development of microgrids throughout Puerto Rico” and the Commission “seeks to harness the potential of decentralized energy resources”. Neither of these goals should place PREPA outside this Regulation, but should include PREPA, including the system requirements. This section allows for a double standard to be created in the distributed energy space in Puerto Rico, where costs and performance could be vastly different whether a system is deployed by PREPA or a consumer or a third-party. This could allow PREPA to develop microgrids to no standards, which would affect cost and performance.

3.02.A.2: What is the purpose of Part “b”? In defining the Primary Energy Source under Renewable Microgrids, why is there an expectation of capacity exceeding expected peak load of the microgrid? In a grid-connected mode of operation, the microgrid can be a net importer of energy from the utility grid. In fact, this is the preferred condition for many reasons. In an island mode of operation, where the microgrid is disconnected from the utility grid for any reason, the consumer site can function quite well at 80% or 90% of its peak demand. Thus, the decision to design a microgrid below, at, or above a peak demand of the site is an economic, reliability, resilience, and sustainability decision by the consumer or community. By the way, the correct term is “demand” versus “load”. Load refers to kWh, and demand refers to kW.

3.03.A.2: What is the technical basis for the selection of 7,000 BTU per kWh? I believe this goes back to the question of exclusion of PREPA system requirements. While all parties could be required to use 7,000 BTU/kWh (heat rate) for CHP applications, PREPA could develop a microgrid with CHP at 13,000 BTU/kWh, such as a coal plant. This would not be consistent with the goals of the government of Puerto Rico.

4.01.B: This clause eliminates third-party participation (and thus funding) of Small Cooperative Systems (<250 kW). Many small cooperatives (or communities) may not be able to fund a 250 kW microgrid that could cost \$1.5M. Is this the intent of the Commission? Similarly, for section 5.01.B, where a large cooperative system, say 1 MW that could cost \$7M, eliminating third-party participation could severely limit the community’s ability to fund the project.

4.02.H: Is it the intent of the Commission to have the system built before the Application is submitted? As written, the Certification of inspection is signed by a Licensed Electric Engineer that the microgrid is in compliance with all regulations. This means that the microgrid has to be already built to enable the Licensed Electric Engineer to certify compliance. It seems that what is actually expected is that the microgrid design is certified

by a Licensed Electric Engineer that the microgrid as designed is in compliance. Please clarify. This question is also valid for 5.02.H and 6.02.H.

4.05: The regulations adopted by PREPA must match section 3.05. If PREPA develops different standards for consumer, community, or third-party microgrids under its interconnection agreement, then section 3.05 is powerless, and the PREPA interconnection standards could deviate from well-established international standards. This is also true for section 5.07 and 6.15.

6.02: Is the certification of the microgrid owner as an Electric Service Company required if the owner is a single site consumer, or third-party owner, behind the meter for an individual system per 2.01.C.1?

6.03.J.1: This section seems to broadly apply to Third-Party Systems. Does it apply to an Individual System (2.01.C.1) behind the meter where the contract is between a consumer and a third-party microgrid owner? What is the basis of regulating the financial transaction of a behind the meter individual system where the parties are private? The same question applies to 6.03.J.2 and 6.03.J.3.

6.10: Is lack of creditworthiness of an individual customer in the immediate vicinity of the microgrid considered discrimination? Often, Small Municipal Systems, Large Municipal Systems, and Third-Party Systems will be faced with the challenge of funding the system, plus managing the long-term risk associated with capital intensive infrastructure like a microgrid system. Such projects are built to specifications that include size of generation, which is based on the size of the load. Thus, if a customer in the immediate vicinity wishes service from the microgrid, increasing the size of the microgrid, but lacks the creditworthiness to assure the customer pays its bills over the term of the PPA, then the project can fail to obtain funding because the one customer is not creditworthy.

6.10: What if adding the customer in the immediate vicinity changes the category from Small Systems (10 customers or  $\leq 250$  kW) (2.01.C.2) or Small Cooperative Systems (2.01.E.2) to Large Systems (2.01.C.3) or Large Cooperative Systems (2.01.E.3)? Will the original cooperative have the ability to say no to the addition, or will the Commission grandfather the Small Cooperative System regarding the number of customers and size regulation?