COMMONWEALTH OF PUERTO RICO
PUERTO RICO ENERGY COMMISSION
#500 Roberto H. Todd Street
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IN RE: ENERGY COMMISSION INVESTIGATION REGARDING THE STATE OF PUERTO RICO'S ELECTRIC SYSTEM AFTER HURRICANE MARIA

Case No. : CEPR-IN-2017-0002

SUBJECT: Response to CEPR's Request for Public Comments

Issue: Implementation of regulatory actions to facilitate the tasks of restoring electric service and encourage the deployment of new technologies

Windmar's answers to Resolution and Order of November 10, 2017

COME NOW, PVP Properties, Inc., Coto Laurel Solar Farm, Inc., Windmar PV Energy, Inc., and Windmar Renewable Energy, Inc. (collectively, "WindMar Group"), through the undersigned legal counsel, respectfully state and pray:

In compliance with November 10, 2017's Resolution and Order here is WindMar Group's contact information:

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General: Introduction and Summary of Windmar's position on Micro Grids

On November 10, 2017 the Puerto Rico Energy Commission (the "PREC") issued a Resolution and Order regarding the implementation of regulatory actions to facilitate the

tasks of restoring electric service and to encourage the deployment of new technologies. WindMar Group, which includes three companies duly certified by the PREC as Electric Power Companies, appreciates the opportunity to give its views on this subject. As entities that currently provide electric service and have the capacity to provide energy without the need of interconnecting to the PREPA grid, WindMar Group hopes the PREC considers its answers and suggestions as we believe they can be of great assistance in addressing our Island's energy needs in both the short and long term.

In the short term, we understand all stakeholders support PREC's initiatives to facilitate the deployment of new technologies that can provide immediate relief to all the people of Puerto Rico: those that have been without power now for over 60 days and those with intermittent service from PREPA. Two measures that PREC can take that will bring immediate relief to the Island's critical situation are: (1) exempting new self-consumption and micro-grid energy systems certified by a licensed engineer meeting the National Electric Code standards from all PREPA interconnection regulations (PREPA has stopped all permitting anyway), and (2) providing assurance from PREC that these new systems will be allowed to continue operation and to interconnect to the grid once the PREPA grid is restored. An avoided cost compensation for exported energy would further promote investment and insure that these systems are deployed promptly. The PREC's assurance of these terms will allow financing alternatives to further spur deployment of these systems and meet the electricity needs of Puerto Rico's residents and consumers. Currently, uncertainty regarding interconnection and continuous operation of energy generation limits new investment to provide electricity to the many consumers still without power and postponing solutions that would bring the electric system of Puerto Rico to 21st century standards, causing people's need for power to be unnecessarily postponed.

In the medium and long term, the PREC guidance and minimum regulation can help lead new technologies to replace Puerto Rico's obsolete grid and fossil fuel generation. To lead our island into the 21st century's technologies, the PREC must shield the industry under its purview from overregulation and must take steps to incentivize a free and fair market.

Responses to Appendix I questions

Following WindMar Group provides answers to select questions included in Appendix I. We have avoided answering questions that would result in repetitive answers or those WindMar Group understands are best answered by other stakeholders.

1. Microgrid Organization:

1.1 What legal authority does the Commission have to regulate actors and actions involved in microgrids? Consider the following actions, among others: Creation of a microgrid business, interconnection with other microgrids, interconnection with PREPA's transmission or distribution system, sales of microgrid output to PREPA (for resale), sales of microgrid output to retail customers (with or without participation by PREPA).

Act 57 of 2014 the "Act for the Transformation and Energy Relief of Puerto Rico" ("Act 57") delegates broad energy regulation powers to the PREC. Act 133 of 2016 amended Section 6.3 of Act 57, *supra*, entrusts the PREC with establishing a regulatory framework to guide PREPA in the development of regulation for micro grids and solar communities. Furthermore, Act 57, *supra*, provides emphatic language promoting Puerto Rico to move towards new technologies and energy efficiency whether through PREPA or other energy providers. Clearly PREC has the authority to regulate actors and actions involved in microgrids.

Electric Power Companies, such as PV Properties, Inc., Coto Laurel Solar Farm, Inc. and Windmar Renewable Energy, Inc. of the WindMar Group, are already regulated by the PREC. The same current regulations can cover microgrid businesses under the

requirements of PREC's *Regulation On Certification, Annual Fees, and Operational Plans For Electric Service Providers in Puerto Rico*.

The delegation of regulative powers should be managed by the PREC with extreme care. Overregulation, a common error on our island, could potentially lead to inaction by PREPA and the private sector. Furthermore, current laws and regulations are sufficient for microgrids to be deployed without need of further regulations. For example, interconnection between microgrids can be negotiated and managed privately under free market negotiations without additional new PREC intervention that would delay the deployment of microgrids and new technologies. PREC currently has meaningful regulative powers under Regulation No. 8543, known as the Regulation on Adjudicative Proceedings, Non-Compliance Notices, Rate Review, and Investigations to insure an orderly and safe implementation of microgrids and other modern approaches in Puerto Rico.

Puerto Rico's current energy needs cannot wait. An unacceptable delay will occur if PREPA has sole discretion on the interconnection of microgrids. Microgrids should have the capacity to connect and disconnect from the grid enabling them to operate in both grid-connected and island modes. This will contribute to reliability, by providing a second energy source, and resilience, by being an energy back-up source. To facilitate interconnection to the grid we recommend certification of compliance with interconnection regulations by a licensed engineer be deemed sufficient. We must move towards an open energy market. This means PREPA's business model, either as a government owned entity or a privatized version of it, must change. Neither PREPA, nor any other entity, should be allowed to both generate and manage the island's grid. No one energy provider should have a competitive advantage over another. This is the only way new alternative

energy solutions that are being implemented worldwide would have a chance to take part in Puerto Rico's post-Maria energy generation.

PREC's determinations should facilitate an open energy market where consumers have choices and true competition drives down the price of electricity. A market where consumers can choose energy providers, including self-generation and an open market where all energy sources compete on a level playing field would result in an efficient, resilient and cost competitive energy system in Puerto Rico.

1.2. What are the advantages and disadvantages of alternative microgrid ownership structures (e.g., third-party, customer co-op, anchor load)? Consider such factors as reliability, economics, accountability.

1.2.1. For each possible ownership structure, what actions by the owners, users and customers should be guided, constrained or rewarded through regulatory actions? What regulatory actions are necessary? What regulatory actions might be unnecessary or problematic?

The advantages and disadvantages of alternative microgrid ownership structures vary amongst different stakeholders. For example, a residential area wanting to participate in a community solar development might not benefit from the same ownership structure as an industrial facility microgrid. Each end-user would have a vested interest in deploying a microgrid that would be resilient, reliable, cost effective, and best suited to its needs. These considerations would vary by end-user and also over time. Attempting to regulate *a priori* particular ownership structures would be ineffective and counterproductive and would unnecessarily delay development of microgrids in Puerto Rico. Thus, the best course of action would be to allow the marketplace and the users of energy to determine which ownership structures best address their needs.

Existing business and contractual laws, including PREC regulations, have adequately protected consumers of electricity and private providers of electricity on the Island. Over the past years, multiple companies have entered into contracts such as Power Purchase

Agreements ("PPAs") and others with private, public and governmental entities such as PREPA and PRASA to supply and sell electricity. In addition, thousands of other systems have been sold to commercial and residential users. Puerto Rico's robust legal system has provided the adequate mechanisms and protection that has allowed all these developments. We do not believe that additional ownership regulations would be required to insure that microgrids are built or that developers and users of microgrids are adequately protected.

1.3. Are there legal or practical obstacles to any desirable ownership structures? If so, what are the solutions, within and outside the Commission's authority?

To our knowledge the only legislation limiting an ownership structure would be Section 10 of Act 133 of 2016 on community solar and microgrids. This Section amends Act 57's delegation of powers to the PREC and orders the PREC, in coordination with OEPPE, to provide the legal framework to regulate community solar and microgrids in coordination with interested parties. Hence, the PREC should provide basis for regulation of microgrids, which presumably may address ownership structures.

1.4. What financing sources are available to support various ownership forms? Consider private investment (both independent investors and commercial entities like large stores), government investment, and foundation and other non-profit sources.

The financing alternatives available to support the various ownership forms will largely depend on the certainty that microgrids would not be overregulated or discriminated in the Puerto Rico energy market, the reputation of the developers, the creditworthiness of the microgrid owner and, in the case of third party ownership, the creditworthiness of the off taker(s) of the microgrid's energy. An open and fair market will efficiently adjust to the needs of customers. Nevertheless, the PREC's assurance that microgrids will be favored

for interconnection and are supported by the government would attract people to invest in microgrids in Puerto Rico.

2. Microgrid placement and availability: *Given the Commonwealth's need and desire to getting service restored to all customers as soon as possible, consider these questions: 2.1. What are the advantages and disadvantages of focusing microgrid development on specific types of customer loads (e.g., large industrial loads, urban loads, rural loads, residential neighborhood loads)? Are some types of load profiles, or some geographic areas, better suited than others? What data exist to support your answer?*

New technologies allow microgrids to provide energy to supply different types of loads. WindMar Group has already designed and built microgrid systems for residential, rural and large industrial loads. The only current challenge in developing these systems is interconnection to the grid. As per the legal definition of a microgrid included in Act 133 of 2016, microgrids are to be able to function in both interconnected and islanded modes. The reason behind this is that interconnection to the grid and in between microgrids may add reliability and resilience to both the grid and the microgrids. Interconnecting to PREPA is currently a colossal challenge. The result of recent interconnection regulations for renewables ordered by the PREC proves that interconnection challenges cannot be solved by regulation. Interconnection under these regulations continues to take over 200 days even under "Plug and Play" dispositions. The many existing obstacles, principally due to PREPA's resistance to allow interconnections are a serious roadblock and can only be overcome by changing Puerto Rico's energy model to allow a free and fair market where no energy generator has an advantage over another; or monopolistic control of any aspect of the electric system be it generation, transmission or distribution.

Existing technologies can address differences in geographic conditions, load requirements, and users' electricity needs. Microgrids have been deployed successfully all over the world and are addressing all types of consumer demand and needs. It is acknowledged that microgrids add resilience and reliability to electric grids and networks

particularly in areas of drastic climatic events such as hurricanes and do so in a cost competitive fashion. Puerto Rico given its topography and exposure to hurricanes is an ideal area for microgrid development, particularly using renewable energy that are locally generated and are not subject to transportation disruption such as is the case with imported hydrocarbons; and, furthermore, do not have the associate adverse environmental impact of burning hydrocarbons.

2.3. What level of financial assurance will microgrid developers reasonably require before investing their own funds in Puerto Rico microgrids?
2.4. What can the Commission do to facilitate universal service in the restoration?

Given recent developments, investors and developers would require assurances that contracts would be respected, that requirements for access to the electric grid would be clear and based on best electrical practices, that interconnection to the grid is not obstructed or delayed by inaction or bureaucratic maneuvers. The interconnection requirements and PREPA's inaction on interconnection requests have led the WindMar Group and other developers to limit investment in Puerto Rico and look for more receptive markets in the Continental United States. If interconnection inefficiencies are not resolved now as part of post-Maria's restoration, investment in Puerto Rico microgrids will make no sense to interested parties therefore leaving the deployment of microgrids and renewables short of meeting the island's needs.

3. Microgrid Regulation
3.1. What form of registration and/or approval by the Commission should be required for microgrids?

Electric Power Companies, as defined by Regulation No. 8618, are required to register with the Commission. Our understanding is that abiding by this regulation's registration requirements is sufficient for the Commission to be able to fulfill its oversight requirements and insure a reliable, resilient, and modern electric system for Puerto Rico.

3.1.1. What regulatory changes would be needed to permit various microgrid arrangements?

No regulatory changes are needed because current regulations do not prohibit microgrid arrangements.

3.1.2. What aspects of microgrid operations should be regulated?
3.1.3. What are the advantages and disadvantages of the Commission establishing technical and financial qualifications for the microgrid developers?

Microgrid customers will be sophisticated enough to be capable of distinguishing whether a microgrid developer is capable of implementing a microgrid or not. A microgrid will be the object of a mutually negotiated agreement.

3.1.4. What are the risks of incompetent or unscrupulous developers and what are reasonable ways to prevent such problems?

The risks of incompetent and unscrupulous developers are a part of all markets. Their existence does not mean regulation is necessary. These types of developers can be held responsible for their actions under current business and contractual laws and practically by customers publicly reviewing their performance for the benefit of others. Moreover, the proposed requirement that licensed engineers certify that the system complies with existing regulations that ensure best electric practices guarantees that the system's design complies with existing pertinent technical requirements.

3.2.2. What are the advantages and disadvantages of requiring inspections? If the Commission requires inspections, what types of professionals and entities should be responsible for conducting them and certifying compliance?
Consider registered engineers (working for the developer, for the Commission or for some other independent entity, municipal construction permit inspectors, others). What technical specifications should apply to the process of interconnecting a microgrid to PREPA's transmission or distribution system?

There are no advantages in the PREC requiring inspections. Inspections would only cause disadvantages by adding a costly step of bureaucracy to the implementation

process. Once again, we understand certification by licensed professionals will insure that the installation and interconnection have been done correctly and meet all requirements.

The process of interconnecting a microgrid to PREPA's transmission or distribution system should be regulated by the Federal Energy Regulatory Commission ("FERC") standards. FERC's Small Generator Interconnection Agreement ("SGIA") and Small Generator Interconnection Procedures ("SGIP") should be the only requirements applicable when interconnecting a microgrid.

3.4. What consumer protections are required, and how should those vary with the ownership of the microgrid?

No further protection than that of existing consumer legislation is needed. The PREC, State Energy Public Policy Office ("CEPPO"), Department of Consumer Affairs ("DACO") all have powers enforce consumer protection. Specifically PREC as regulator of Electric Power Companies has the power to address complaints from customers and determine penalties that include rescinding the Electric Power Company status of the non-complying entity.

3.4.1. Prices and costs.

The most effective mechanism to insure best price and costs is to minimize impediments for different companies to participate in the development and construction of microgrids and for customers to have multiple choices of the types, sizes and locations of microgrids. The PREC should focus on technical requirements that insure microgrids comply with best electric practices and allow the marketplace to determine where and how to build, interconnect and own microgrids. Developers and users would have different requirements and these will change over time. Attempting to formulate regulations for

every possible scenario would delay deployment of microgrids and bury the PERC in bureaucratic inaction.

3.4.1.1. Assuming (for purposes of this question) that microgrid owners can sell their output directly to retail customers, what are the advantages and disadvantages of different pricing methods (including traditional cost-based pricing, price caps based on reasonable projected cost, and allowing market forces to set prices)? Is it reasonable for there to be an administrative charge to cover the Commission's oversight costs?

We believe that the most cost effective mechanism is to allow customer choice and competition to set the prices. To the extent purchasers of electricity are no longer captive to a monopolistic supplier, the price of electricity from microgrids and other sources would be determined by the market place without the need of the PREC having to intervene in setting prices. The PREC had an important role in setting electricity prices in the current monopoly market for electricity distribution.

3.4.2. Contract terms.

Contract terms should provide for review of controversies to be disputed before the PREC. By doing this, precedents will be established over time allowing the microgrids to be deployed in the short term and regulated by administrative decisions over time.

3.4.2.1. What are the advantages and disadvantages of the Commission establishing standard contract terms for retail and wholesale (to PREPA) sales?

This is unnecessary. WindMar Group has negotiated terms of similar contracts with the Puerto Rico Aqueduct and Sewer Authority, PREPA and many private entities without the need of PREC intervention. The result has been fair negotiations leading to agreements that favor both parties equally. Many of these agreements have been in place for over 5 years now and none have created any unresolved disputes.

3.4.2.2. How does the answer to the preceding question vary by customer group? For example, should standard terms be required only for residential and small-commercial customers?

WindMar Group has entered into agreements with at least one customer from each customer group and the result has been the same. Furthermore current regulations allow complaints against Electric Power Companies to be filed before the PREC, hence providing customer protection.

3.4.2.3. Should the standard terms be required only for microgrids owned or operated with the main purpose of selling energy at retail?
3.4.2.4. Should contract provisions be subject to Commission review?

Having contract provisions subject to PREC's review will ensure consumer protection and make further regulation unnecessary at this time. If through experience, the PREC finds the need to modify regulations, it could do so to address actual situations and not attempt to address every hypothetical scenario. This way we will avoid delaying microgrid and renewables immediate deployment.

3.4.2.5. Should the Commission set limits on contract duration?

The PREC should not set limits on contract duration. The market and the particular needs and limitations of the customer should dictate the length as well as all other terms of the contract. Microgrids offer more flexibility on how to recuperate the investment.

3.4.2.6. How should the Commission address customers who decide they no longer wish to be part of a microgrid?

Given that to build and finance microgrids, the developer would require financing, it is important that the contract provide for certainty. The parties to a microgrid contract can agree to early termination provisions; as well, as to any other provisions that might be of interest to them. In an open and competitive market, both parties would be able to agree on terms that best suit them.

3.4.2.7. Should the development of microgrids require unanimous approval of customers within the area to be served by microgrids?

We think that a key to a vibrant and cost-effective electric network is to allow the customers to choose who and how supplies them electricity. Thus, we believe firmly that participation should be voluntary.

3.5. Must all microgrids (at least those serving multiple customers) charge for services by metering delivered energy, or are other pricing structures acceptable?

As with other third party ownership agreements, services can be charged per kilowatt-hour or by leasing arrangements or by any other mechanisms that the parties to the contract freely choose.

3.7. What timing requirements, in terms of the development process, must the Commission take into account, when determining how long it will take to approve or reject a microgrid proposal?

A microgrid project will be cost-effective, safe and reliable without the need of intervention by the PREC. Electric Power Companies currently provide the PREC with extensive information regarding their operations. Information related to the microgrids can be provided in the form of a registry with a minimum of capacity information provided. The need for microgrid proposals and their approval will only delay their deployment.

4.2. Are there any existing solar facilities that could be firmed up with storage and connected to load?

Yes, WindMar Group has approximately 32 megawatts of solar installed capacity throughout 14 locations that could be firmed up with storage and connected to load. Currently the off takers of these projects include PREPA, PRASA and Pfizer Pharmaceuticals.

4.3. For generation facilities under contract with PREPA, how would use of those facilities to serve a microgrid affect PREPA's contract?

Depends on the type of microgrid.

4.5. Is it legal, practical, and necessary for solar-storage or wind-storage microgrids to have some fossil fuel back-up capacity?

It is legal, to our knowledge there is no legislation impeding fossil fuels to back-up renewable energy systems. The configuration of any particular microgrid would be determined by the offtaker's needs and the developer's preferences.

4.5.1. How much fossil fuel based back-up capacity can be used in a microgrid without compromising its renewable status and ability to sell to customers?

If federal and or state funds are used, then there might be some restrictions. The amount of energy from the non-renewable energy back-up and how much is from renewable back-up or directly from renewables can be measured and accounted.

6.1.5. For all commenters: What are the advantages and disadvantages of the Commission requiring PREPA to develop microgrids in some areas? Would such a requirement avoid duplication of effort and conflict? Would itdiscourage competitors from entering the Puerto Rico microgrid market?

Private enterprise and the market are better at this than a commission. It would discourage the market.

6.2. Are there areas that should be reserved for PREPA restoration, or should microgrids be encouraged everywhere?

All generation should be treated equally. PREPA should not have a competitive advantage or disadvantage over other competitors. In a free and fair market microgrids will be established where and how they make sense.

7. Use of Stranded PREPA Equipment: *This set of questions addresses the possibility of assisting microgrid development by using existing PREPA equipment that PREPA is temporarily unable to use.*

PREPA should have the option to explore this alternative. If it is cheaper to buy a PREPA facility than to build a new one, then let the market decide. Brownfield properties have environmental and operational risks.

7.1. Should microgrids be allowed to deliver power to customers through existing PREPA metering equipment?

That will have to be negotiated with PREPA. The Legislature has anticipated this eventually and had approved "wheeling". To date, PREPA has not fulfilled its obligations to allow wheeling. The PREC could help by issuing the pertinent requirements and regulations to enable wheeling.

7.1.1. If so, how and when should PREPA be compensated for that use?

The wheeling regulation can establish the rates for use of PREPA's transmission and distribution facilities.

7.1.1.1. Should the Commission set a fixed rate per meter, based on the average embedded costs of PREPA meters?

This topic should be addressed by wheeling tariffs.

7.1.1.2. Should the microgrid pay a monthly fee, or purchase the equipment outright?

This is a market decision.

7.2. Should microgrids be allowed to purchase distribution equipment (poles, primary lines, secondary lines, service drops, and transformers) that PREPA is not currently able to use due to lack of connection to central generation?

If PREPA is willing to sell and they are willing to buy, why not?

I HEREBY CERTIFY that this Motion was notified on this date via email to the following:

Respectfully submitted in San Juan, Puerto Rico on November 21, 2017.

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