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April 10, 2024

Public Utility Commission of Texas
Chairman Thomas Gleason
William B. Travis Building
1701 Congress Avenue
Austin, TX 78701

Texas Backup Power Package Advisory Committee
The Honorable Nathan Johnson, Chairman
William B. Travis Building
1701 Congress Avenue
Austin, TX 78701

Re: SB2627 & Project No. 55407 Backup Power Package

Dear Chairman Gleason and Chairman Johnson,

Please accept the below comments regarding Project No. 55407 respectfully submitted by the Microgrid Resources Coalition (MRC).

The MRC greatly appreciates the work of the Commission and Advisory Committee. These comments provide background on MRC, the urgency for fully adopting the Backup Power Package (BPP), and offers specific recommendations on critical steps to maximize the value of the BPP for Texans.

Key Recommendations:

1. Clarify the 2.5 MW size limit caps financial support, but not the overall project size.
2. Provide an equal playing field across all end customer and provider microgrid business models by explicitly allowing applicants to act on behalf of end customers.
3. Clarify that as long as a resource satisfies the enumerated statutory criteria as a microgrid (such as those running baseload), it should qualify for all relevant incentives as a Backup Power Package.
4. Explicitly state that renewable natural gas, biogas, blends of biogas (for instance, part biogas and part natural gas) and blends of natural gas (for instance, part natural gas and part hydrogen) are forms of natural gas and thus eligible under SB2627.



About the Microgrid Resources Coalition

The MRC is a national association of leading microgrid owners, operators, developers, suppliers, and investors seeking to advance microgrids through education, policy advocacy and market development activities that ensure market access, fair compensation for services, and a level playing field for deployment and operation. The MRC's members are actively engaged in developing microgrids throughout Texas and across the United States and are at the cutting edge of microgrid technology advancement.¹

The mission of the MRC is to promote microgrids as energy resources by pursuing policy and regulatory reforms that recognize and appropriately value the services that microgrids offer, while assuring non-discriminatory access to the grid for various microgrid configurations and business models. The MRC generally supports disaggregated, fair pricing for well-defined services both from the grid to microgrids as well as from microgrids to the grid. The MRC promotes community-based resilience standards and supports utilities that are working toward business models that accurately value resilient distributed energy resources (DERs) and microgrids, and facilitate the flexible integration thereof. Our association is firmly committed to the empowerment of energy customers and communities.

Urgency for the Back Up Power Package

The State of Texas is to be commended for taking on the effort of addressing the issue of energy reliability. While the In-ERCOT Generation Loan Program has moved forward with applications opening June 1, 2024, the BPP does not yet have an announced timeline for applications.² The State has made progress including convening the Advisory Committee and announcing plans to hire a technical consultant. The MRC respectfully implores state regulators to finish the job expeditiously and fully deploy funding for the Backup Power Package.

The need for the BPP is urgent. ERCOT recently predicted a 1-in-6 chance of a grid emergency if a major winter storm struck Texas again, according to the University of Houston.³ Currently, market signals are insufficient for microgrid deployment in Texas, which is why the funding is critical to activate the market.

As we all know, the February 2021 winter storm resulted in widespread damage, including 246 confirmed deaths by the Texas Department of State Health Services across 77 counties.⁴ In

¹ MRC members include: Bloom Energy, ENGIE North America, Ictec Energy Services, Mainspring Energy, Schneider Electric, and The Energy Coalition. The MRC's comments represent the perspective of the coalition and should not be construed as speaking for any individual member.

² Available at <https://www.puc.texas.gov/industry/electric/business/texas-energy-fund/>.

³ Available at <https://www.houstonpublicmedia.org/articles/infrastructure/ercot/2024/01/08/473687/remember-this-summer-high-electricity-bills-they-could-be-back-this-winter/>.

⁴ "February 2021 Winter Storm-Related Deaths - Texas", Texas Department of State Health Services (Dec. 31, 2021). Available at

addition, 69 percent of Texans lost power with an average disruption of 42 hours (31 of which were consecutive hours). Moreover, 49 percent of Texans lost running water, with the average disruption of 52 hours. All of this analysis by the Texas Comptroller highlights the economic toll ranging from \$80 Billion to \$130 Billion.⁵

Technical requirements in SB2627 ensure that public funding will be used to avoid such devastation in the future. These include the following stipulations:

- “Is capable of operating for at least 48 continuous hours without refueling or connecting to a separate power source”;
- “Engineered to minimize operation cost”; and
- “Uses interconnection tech and controls that enable immediate islanding from the power grid and stand-alone operation for the host facility.”

Grid reliability is an issue across the United States but has hit Texas harder than any other region in recent years. Severe weather events have increasingly become both more severe and more frequent. The Texas Backup Power Package has promise to ensure that the reliability issues experienced by the State in the past will not happen again. The success of this rulemaking is of the utmost importance to clarify critical questions left to the Commission and assure the maximum effectiveness of the legislation. While no one denies that large central generation is also helpful for reliability, local generation and microgrids arguably provide greater defense to Texas communities to assure “health, safety and well-being”.

Background on Microgrids

The U.S. Department of Energy (DOE) has used as a working definition for a microgrid: “a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid. A microgrid can connect and disconnect from the grid to enable it to operate in both grid-connected or island mode⁶.” Operating in island mode means the ability of the microgrid operator, using sophisticated software known as a microgrid controller, to balance the included loads using included generation and storage resources.

https://www.dshs.texas.gov/sites/default/files/news/updates/SMOC_FebWinterStorm_MortalitySurvReport_12-30-21.pdf.

⁵ Available at <https://comptroller.texas.gov/economy/fiscal-notes/archive/2021/oct/winter-storm-impact.php>

⁶ DOE Office of Electricity Delivery and Energy Reliability Smart Grid R&D Program, *DOE Microgrid Workshop Report* at 1 (2011). Available at

<https://www.energy.gov/sites/prod/files/Microgrid%20Workshop%20Report%20August%202011.pdf>

(This is consistent with the MRC’s definition (which also emphasizes the ability of microgrids to provide services to the larger grid when grid connected).

Operating as a single controllable entity means that while the microgrid may include, for example, solar generation, battery and thermal storage, smart energy efficiency measures to modify load, and fuel-based generation, such as linear generators, combined heat and power or fuel cells, the microgrid can interact with the grid as a single resource and provide multi-day reliability as required in SB2627.

To the primary objective of the Backup Power Package, microgrids can operate independently of the grid in response to disruptive events, preserving the functioning of the included customers and their service recipients. This is why critical facilities, such as hospitals, grocery stores, food distribution centers, wastewater treatment plants, & public safety facilities have relied on microgrids to ensure access to uninterrupted power.

Microgrids face significant barriers and Texas action called for under SB2627 is critical to accelerate growth of microgrids in the state. States as varied as West Virginia, Wisconsin, Colorado, and Kentucky have engaged in studies on the feasibility of microgrids.⁷ With the public funding and direction provided under the Backup Power Plan, MRC members seek to invest significant resources in Texas and prevent the death and destruction of Winter Storm Uri in the future.

Recommendations for Maximizing SB2627's Effectiveness

In order to achieve the potential of SB2627, the MRC respectfully offers the following recommendations. The MRC divides recommendations into two categories (Tiers 1 and 2) with the highest priority recommendations (#1-4) in Tier 1 and secondary recommendations (#5-7) in Tier 2.

Tier 1 Recommendations:

1. Clarify the 2.5 MW size limit caps financial support, but not the overall project size.

The 2.5 MW size limit should not be a limitation on the size of an installation, but only on how much of an installation can be eligible for a grant or loan under the program.

Limiting eligible projects to those that fall under 2.5 MW would greatly reduce the effectiveness of the legislation, as it would remove from eligibility a host of critical facilities that would otherwise be eligible. For example, the average hospital load is 5 MW. Please provide clarifying language outlining that projects are eligible for funding for up to 2.5 MW of larger projects, such that the first 2.5 MW are eligible, allowing larger projects to partially participate.

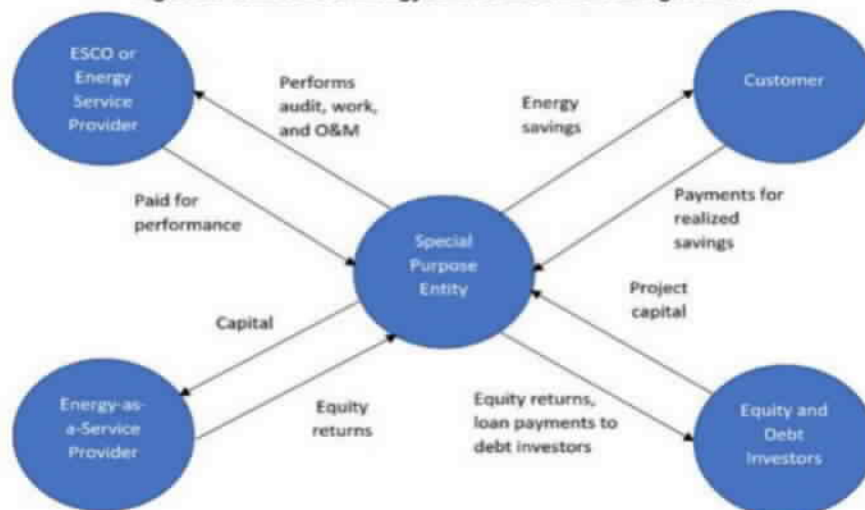
⁷ NASEO and NARUC, "State Microgrid Policy, Programmatic, and Regulatory Framework" (Aug. 2023), available at <https://www.naseo.org/data/sites/1/documents/publications/Final%20Microgrid%20Framework.pdf>.

2. Provide an equal playing field across all end customer and provider microgrid business models by explicitly allowing applicants to act on behalf of end customers.

The MRC strongly recommends that future rulemakings clarify that BPP applicants and fund recipients may be the end customer or an entity submitting a request for a loan or grant on behalf of the end customer. In many, if not most cases, the beneficiary of a microgrid (a hospital, for instance) will not own a microgrid, instead the owner will be a project developer or special purpose vehicle that will develop, own and finance that project. In many cases, the developer will thus be the entity submitting a request for the grant or loan based on the profile of the project and the end customer.

For further background, many customers prefer to not have major assets such as a microgrid on their balance sheets and instead, defer the project development to energy project developers. The end customer will therefore lease a microgrid or pay for “energy as a service”. NASEO and NARUC highlighted this reality in their 2021 paper (image below).⁸ As a result, if the Commission were to adopt rules that require the end-use customer to own the assets, this would pose a tremendous barrier to the success of SB2627. Such a decision would disqualify end customers that desire a microgrid energy project via energy project developers.

Figure 2: Generalized Energy-as-a-Service Financial Agreement



Adapted from G. Leventis, et al., “Current Practices in Efficiency Financing,” Lawrence Berkeley National Laboratory, November 2016, p. 54, <http://eta-publications.lbl.gov/sites/default/files/berl-1006406.pdf>

3. Clarify that as long as a resource satisfies the enumerated statutory criteria as a microgrid (such as those running baseload), it should qualify for all relevant incentives as a BPP.

⁸ NASEO and NARUC, “Private, State, and Federal Funding and Financing Options to Enable Resilient, Affordable, and Clean Microgrids (Jan. 2021), available at https://naseo.org/Data/Sites/1/v2_naseo_microgrid.pdf.

In the experience of the MRC's members, most critical facilities that seek to install microgrids are planning to use some if not all components of the microgrid on a daily basis. It's appropriate to think of all microgrids as "backup" to the grid given the grid is a ubiquitous feature of the electricity system. However, from a functional standpoint, where a customer has access to both local generation and the grid, the local generation generally makes up a portion if not all baseload power.

Considering the BPP's expansive generation source requirements, it would be especially unusual to require the microgrid to only provide power in the case that the grid was not available. Clarifying that microgrids may serve a variety of day-to-day values to the end customer, so long as they also meet the standards enshrined in SB2627 will add important certainty to market participants and end users.

4. Explicitly state that renewable natural gas, biogas, blends of biogas (for instance, part biogas and part natural gas) and blends of natural gas (for instance, part natural gas and part hydrogen) are forms of natural gas and thus eligible under SB2627.

Commission specifications should be flexible and not overly prescriptive, focusing on outcomes that benefit the broadest range of potential projects. SB2627 was relatively broad in naming a broad set of fuels that are produced in Texas. The law requires that microgrids power sources have one of two broad characteristics: from either "(A) a combination of natural gas or propane with photovoltaic and battery storage or (B) battery storage on an electric school bus"⁹.

Focusing on part (A) above, "natural gas" can consist of either the fuel that we most frequently associate with today from a pipeline, or may look more varied, especially in the near future. Landfills, wastewater treatment plants, and dairies produce methane that can be captured and used to generate power ("biogas" or "renewable natural gas"). Texas anticipates becoming a center of hydrogen production which is likely to be blended with natural gas to reduce the carbon content.

Tier 2 Recommendations:

5. Leverage consultants to conduct a thorough analysis of supply chains and critical facilities. Adopt a definition of "facilities on which communities rely for health, safety and well-being" that considers local needs and provides specific examples while allowing flexibility for unique communities.¹⁰

The MRC supports a broad definition that considers local needs and incorporates technical analysis to arrive at the full scope of supply chains and facilities that require hardening. For

⁹ SB2627, Sec. 34.0204.

¹⁰ SB2627, Sec. 34.0202.

instance, hospitals by most interpretations would fall into “health, safety and well-being.” But many communities may not always have a standard facility, and instead rely on what they have such as a school building to gather during a multi-day grid outage. In addition, while grocery stores are clearly critical to provide food in an emergency, evaluating the supply chain is likely to determine that cold food storage and other food distribution centers are similarly critical to ensure the flow of food and supplies.

As one example of analysis on a national scale, the CISA has identified “16 critical infrastructure sectors whose assets, systems, and networks, whether physical or virtual, are considered so vital... that their incapacitation or destruction would have a debilitating effect on security...”¹¹

The definition from CRS Community Self-Assessment may enable a sufficiently broad reach to all communities in Texas: “Critical Facility: A structure or other improvement that, because of its function, size, service area, or uniqueness, has the potential to cause serious bodily harm, extensive property damage, or disruption of vital socioeconomic activities if it is destroyed or damaged or if its functionality is impaired. Critical facilities include health and safety facilities, utilities, government facilities and hazardous materials facilities.”¹²

In addition to a broad definition, the MRC supports the Commission publishing an explicit list of approved facility types to provide forward certainty to microgrid development. In addition, the MRC supports establishing a process to grant unusual facilities one-off approval in cases where such facilities can demonstrate a vital role in a community. Texas regulators have taken important steps already to identify many critical facilities including 12,740 facilities in the electric supply chain and the MRC encourages leveraging existing analyses already completed in Texas.¹³

6. Investor-owned utility, public power, and third-party resilience programs, including DER Aggregations, should be eligible to qualify in whole or in partnership.

Often IOUs and public power are responsible for critical infrastructure. One could imagine Texas microgrids that include digital technology upgrades (e.g., sensing, controls) to allow for more granular operation of the distribution grid, in conjunction with solar, batteries, and distributed generation for resilience owned and operated by utilities and public power, or that have multiple owners to separate competitive and regulated elements.

¹¹ Available at <https://www.cisa.gov/topics/critical-infrastructure-security-and-resilience/critical-infrastructure-sectors>.

¹² “What Is a Critical Facility?” 2012. CRS Community Self-Assessment. January 10, 2012. <https://crselfassessment.us/what-is-a-critical-facility/>.

¹³ See Texas Electricity Supply Chain Map, <https://www.puc.texas.gov/industry/maps/supplychain/> and Texas Water Development Board <https://twdb-flood-planning-resources-twdb.hub.arcgis.com/pages/critical-infrastructure>.

In addition, “Distributed Energy Resource Aggregations” or “Virtual Power Plants” that are owned by customers and operated by third parties can contribute to resilience and should be taken into account and eligible to participate in the BPP. Finally, regulators may wish to look to other large states with isolated community power needs.¹⁴ SDGE, PG&E and SCE operate remote grid programs.

Remote Grid

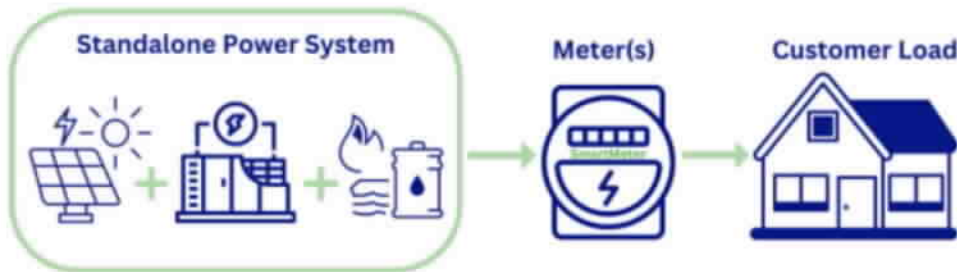


Figure 1: Diagram of remote grid components from SDGE Remote Grid Standalone Power System program.

7. Align the timeline on rulemaking on BPP grants and loans with the rulemaking to develop procedures to expedite interconnection.¹⁵

Interconnection procedures are a critical component to developing a microgrid. Waiting to finalize what the procedures of interconnection look like until after a grant or loan program is established will create unnecessary uncertainty and may result in reduced interest in the BPP. Likewise, adopting an interconnection process prior to the broader BPP program, will also add uncertainty.

Conclusion

Thank you once again for taking on this crucial task of ensuring reliability for businesses and residents across Texas and thank you for taking the time to read and consider the comments of the MRC. Our association is composed of experts across numerous technologies with substantive backgrounds in microgrids.

Accordingly, members of the MRC stand ready to provide any assistance as deemed necessary or helpful by the Texas Backup Power Package Advisory Committee, the Commission, and its consultants, to maximize the effectiveness of SB2627 and forthcoming rulemakings.

¹⁴ See SDGE Remote Grid Standalone Power System. Available at https://tariff.sdge.com/tm2/pdf/submittals/ELEC_4277-E-A.pdf

¹⁵ SB2627, Section 34.0205 (g).



Sincerely,

Pierson Stoecklein
Executive Director
Microgrid Resources Coalition