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Questions filed in PUCT docket 57236-14 by the Texas Energy Fund Administrator

1. The Final Report outlines specifications for TBPPs of various sizes to serve critical facilities.

A. How, if at all, could these specifications affect the ability of critical facilities to apply for, install, or utilize TBPPs?

The outlined TBPP specifications align with the primary objective of ensuring backup power for critical facilities. However, the current design considerations introduce some challenges:

- **Application Process**: Some facilities may lack the technical resources to navigate complex application requirements and system design choices.
- **Installation Barriers**: Rural and space-constrained urban sites may struggle with natural gas access, solar PV placement, and permitting.
- **Utilization Concerns**: The requirement for 48-hour ***continuous*** operation may result in unnecessary reliance on BESS for facilities that can tolerate a brief outage before the generator starts.

B. How, if at all, should the outlined specifications for TBPP packages be modified to ensure that the packages can serve most critical facilities in Texas?

To optimize TBPP implementation, we recommend:

- **Customizable System Configurations**: Allow flexibility in selecting components (genset-only, optional BESS, or hybrid solutions) to meet specific facility needs.
- **Optional BESS Implementation**: Many facilities do not require an instantaneous backup power supply. BESS should only be included when absolutely necessary for facilities with critical loads that cannot tolerate even a brief power loss.
- **Adjustment of Package Sizes**: A 2,500 kW single-ATS design should be developed to accommodate larger facilities while maintaining a nominal 480V, 4000-amp rating.
- **ATS Interrupting Current Rating Alignment**: TBPP design drawings show ATS ratings of 65kA. This should be revised to match the existing facility electrical service distribution equipment rating.
- **Electrical Signage Details**: Signage should include required utility notices indicating generation is located "behind the meter."

2. The Final Report provides a list of potential vendors for the TBPP program

A. What factors, if any, could affect the ability of such vendors to assist with the sale, installation, operation, and ongoing maintenance of TBPPs?

Vendors may face barriers related to supply chain risks, financial constraints, and complex interconnection requirements:

- **Supply chain disruptions** could delay component availability, particularly for battery storage and gensets.
- **Financial risk exposure** due to large upfront costs and delayed reimbursement from grant funding.
- **Compliance challenges** in meeting interconnection and permitting standards across diverse facility types.

B. How should the TBPP program be designed to maximize the ability of vendors to assist with the sale, installation, operation, and ongoing maintenance of TBPPs?

To strengthen vendor engagement and program efficiency:

- **Establish a Pre-Qualified Vendor List**: Reduce administrative burdens by pre-certifying equipment suppliers and installers.
- **Incentivize Performance-Based Payment Models**: Implement milestone-based payments to improve cash flow for vendors.
- **Facilitate Third-Party Ownership Models**: Enable vendors to provide TBPPs via Resilience-as-a-Service (RaaS) agreements, where they own and maintain the systems.

3. In Sections 2-4 and 2-5, the Final Report outlines design requirements and assumptions; technology specifications; operating sequences; and installation requirements.

A. How, if at all, could the specifications described in these sections affect implementation of the TBPP program?

- **ATS Rating Alignment**: The report specifies ATS interrupting current ratings at 65kA; this should match the facility's existing electrical service rating to ensure compatibility.
- **System Component Compatibility**: Controllers and relays should be standardized for seamless operation across different components.
- **Solar Component Considerations**: If BESS is not directly tied to utility service, installing solar PV as a BESS charging source becomes redundant.

B. **How, if at all, should the specifications be modified to ensure effective implementation of the TBPP program?**
   - **Refine ATS Requirements**: Ensure ATS ratings align with facility infrastructure to prevent compatibility issues.
   - **Improve Controller Standardization**: Require system-wide controller and relay interoperability for streamlined performance.
   - **Reevaluate Solar PV Integration**: Provide flexibility in whether solar PV is required, particularly when BESS is not actively charging from the grid.

4. **How should the TBPP be designed to mitigate or remedy any other factors that could negatively affect program implementation or participation, while ensuring compliance with statutory requirements? Please limit this response to factors not previously mentioned in responses to questions one through three above.**

   To ensure the success of the TBPP, several additional factors must be addressed. Funding accessibility remains a key barrier, as the current $500/kW grant cap is often insufficient to cover installation costs. Introducing low-interest financing options or cost-sharing models would improve affordability. Additionally, permitting delays and complex interconnection requirements hinder implementation, particularly for facilities unfamiliar with the process. Developing statewide standardized permitting guidelines and a pre-approved equipment list would streamline approvals. Utility coordination is also critical—establishing clear interconnection agreements and allowing TBPP participation in ERCOT demand-response programs could enhance grid stability and create cost-offsetting opportunities. Lastly, facility operator training should be incorporated to ensure personnel understand system operation and maintenance, improving long-term reliability.

Additional questions filed in PUCT docket 57236-16 by Alison Silverstein Consulting

- **Will the proposed technical specifications proposed yield TBPPs that work effectively to meet Texas critical facilities' resilience goals? Are there any elements in the proposed technical specifications that should be corrected or improved?**

  For better operation of the BESS system, its electrical connection to the Facility load should be **directly to Load and not through the ATS**. This will allow the Gen(s) to synchronize to the BESS after loss of Utility voltage and ATS disconnection. The system controller will then ramp up the Gen(s) to required kW, and the BESS will be removed from service until normal Utility service is restored. This adjustment would eliminate the need for solar panels dedicated to BESS charging when it is not normally connected to utility service.

- **Does the recommendation that the TBPP packages be sized for 10kW, 25kW, 100kW, 500kW and 1,000kW (Patrick Engineering final report, p. 15) work for what we know of the Texas critical facility population? Is there any reason to modify this set of package sizes? If so, what alternate package sizes do you recommend and why?**

  EPX recommends a **2,500kW single-ATS design** that includes electrical components not exceeding a **480V, 4000-amp nominal service rating**. Given the expected number of facilities requiring TBPP installations, this larger backup power design would be more suitable for certain facilities.

- **Do the cost estimates in the final report (final report pp. 29-31) appear valid? Why or why not? If your organization were planning to offer TBPP packages in volume based on these specifications, what would you estimate as the integrated TBPP package and installation costs for the various TBPP package sizes?**

  Cost estimates should reflect real-world conditions, including supply chain constraints and installation costs. Additional analysis is needed to validate whether the estimates provided align with expected procurement and labor costs.

- **Are there any ways to modify the proposed TBPP technical specifications (for instance, with respect to the role of and sizing balance between package energy components) to reduce the cost or improve the effectiveness of the TBPPs without compromising the TBPP critical facility goals and statutory requirements? How would these changes affect the cost and performance of the resulting backup power packages?**
  - **Adjusting the role of BESS**: BESS should only be installed where necessary, reducing overall system costs.
  - **Reducing reliance on solar PV for BESS charging**: If BESS is not grid-connected, solar PV requirements should be made optional to reduce upfront costs.
  - **Standardizing ATS and interconnection designs**: Simplifying interconnection requirements can lower installation expenses.

Executive Summary

EPX Group has reviewed the Texas Backup Power Package (TBPP) Final Report and offers recommendations to improve the program's feasibility, effectiveness, and cost-efficiency. While the TBPP provides a solid framework for energy resilience, refinements are needed to ensure broad adoption and practical implementation.

One key issue is the mandatory inclusion of Battery Energy Storage Systems (BESS). Many facilities do not require instantaneous backup power, as brief outages during generator startup are acceptable. We recommend making BESS an optional component, only required for facilities with critical loads that cannot tolerate any power disruption. This will lower costs and streamline installations.

Additionally, the existing package sizes (10kW to 1,000kW) do not fully accommodate larger critical facilities such as hospitals and emergency response centers. We propose introducing a 2,500kW single-ATS package with 480V and 4,000-amp service capacity to better serve high-demand facilities.

From a vendor and implementation perspective, we recognize potential barriers such as supply chain constraints, financial risk, and permitting delays. To address this, we propose:

- **Pre-certifying vendors** to streamline procurement and installation.
- **Performance-based payment models** to ease vendor cash flow.
- **Allowing third-party ownership models** (e.g., Resilience-as-a-Service) to reduce upfront capital requirements.

Cost concerns should also be addressed. Requiring solar PV for BESS charging adds unnecessary costs when BESS is not grid-connected. We recommend making solar PV optional where it improves efficiency. Similarly, the 65kA ATS rating requirement should be adjusted to match facility infrastructure, reducing unnecessary upgrades.

To strengthen long-term program success, EPX urges PUCT to:

- **Expand funding mechanisms**, as the $500/kW grant cap is insufficient to cover full system costs.
- **Partner with ERCOT** to explore demand-response incentives, allowing facilities to offset costs by temporarily islanding during peak demand.
- **Provide technical support for applicants**, ensuring facilities can navigate system sizing, permitting, and financing.

By implementing these recommendations, the TBPP can achieve greater efficiency, cost-effectiveness, and adaptability, ensuring that Texas' critical infrastructure remains resilient while optimizing public and private sector investments.