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PROJECT NO. 54999

	§	**BEFORE THE**
TEXAS ENERGY FUND	§	**PUBLIC UTILITY COMMISSION**
	§	**OF TEXAS**

GRID RESILIENCE IN TEXAS' COMMENTS IN RESPONSE TO COMMISSION STAFF'S QUESTIONS ON IMPLEMENTATION OF THE TEXAS ENERGY FUND

Grid Resilience in Texas ("GRIT") appreciates the opportunity to provide comments in response to the questions included in the Public Utility Commission ("Commission") Staff's September 19, 2023 workshop agenda regarding implementation of the Texas Energy Fund created by Senate Bill 2627 ("SB 2627") in the 88th Texas Legislature.[1] GRIT is comprised of a group of leading flexible generation and microgrid companies, including Enchanted Rock, Generac Power Systems, PowerSecure, and Wartsila. These companies represent projects that encompass a spectrum of sizes, from small-scale behind-the-meter ("BTM") assets to large generation facilities utilizing various technologies and fuel types.

I. GRANTS FOR FACILITES OUTSIDE OF THE ERCOT POWER REGION

No response at this time.

II. LOANS FOR FACILITIES INSIDE THE ERCOT POWER REGION

A. *How should the PUC evaluate an applicant's ability to address regional and reliability needs?*

1. Prioritize Funding Based on Project Readiness and Operational Reliability

GRIT supports the Commission's acquisition of a third-party contractor to assist in the implementation and administration of Texas Energy Fund ("Fund") power generation facility loans. These facilities are complex, expensive endeavors; expert opinion should be used to support underwriting activities and distinguish the best investments for the state of Texas.

As we explained in our comments prior to the workshop, prioritizing funding for grid-scale dispatchable generation is necessary to ensure an efficient allocation of the Texas Energy Fund.

[1] *See September 21, 2023, Texas Energy Fund Public Workshop Agenda*, Project No. 54999 (Sept. 19, 2023); *see also September 21, 2023, Texas Energy Fund Workshop Comments*, Project No. 54999 (Oct. 5, 2023).

Given the significant interest expressed in the loan program thus far, the Fund will likely be oversubscribed. Therefore, GRIT urges the Commission to implement a framework to evaluate project applications so that funding is prioritized based on project readiness and resource attributes.

The matrices below propose factors the Commission could use to evaluate project readiness and resource attributes.

PROJECT READINESS	True/False
Control of Site? (Land lease or Deed)	
SPV is in place? (Special Purpose Vehicle)	
Generator Interconnection Study Started? (ERCOT Report)	
Generator Interconnection Agreement Signed? (ERCOT Report)	
Fuel Supply Contract Signed?	
Assigned Engineering Procurement Contractor? (EPC)	
Engineered Equipment Contract Signed? (EEQ) – If Separate from EPC.	
Asset Management Agreement Signed? (AMA)	
Proof of Funds / Terms Sheet?	
Engineering Work has advanced?	
Air Permit Started (TCEQ)?	
Air Permit Completed (TCEQ)?	
Highway Use Agreement signed?	
FAA -Form 7460-1 Filed?	
FAA -Form 7460-1 Completed?	
Registration as a Power Generation Company?	

Resource Attribute Assessment	Weight[2]	Comments
Flexibility	50%	Resources that maximize (e.g., Ramp Speed) and Minimize (e.g., Startup Time, Min Run Time, Min Down Time, and Min Operating level)
Fuel Efficiency	15%	Resources that have lower heat rates are more efficient
Historical Availability	20%	Resources that have a high historical availability
Thermal Derate	10%	Resources that minimize reduction of available capacity due to ambient conditions
Water Consumption	5%	Resources that minimize consumption of water for power generation and cooling

GRIT further proposes that the Commission compare the resource attributes of project applications to the resource attributes of existing dispatchable generation facilities that have been operating for 30 years or more in ERCOT.[3] This comparative analysis would enable the Commission to better determine the extent to which project applications would impact the reliability of the grid.

Existing dispatchable generators in operation already provide resource attribute data to ERCOT in the resource asset registration forms (RARFs).[4]

Resource Asset Registration Form

GENERATOR DETAILS		RESOURCE PARAMETERS						
Unit Name	Resource Name (Unit Code/Mnemonic)	Minimum On Line Time	Minimum Off Line Time	Hot Start Time	Intermediate Start Time	Cold Start Time	Max Weekly Starts	Max On Line Time
List	Automatic	hours	hours	hours	hours	hours		hours

The table below shows the resource attributed weighted average calculation for each type of dispatchable resource considering existing dispatchable generation facilities that have been operating for 30 years or more in ERCOT using data from the Seasonal Assessment of Resource Adequacy Report.

Resource Attribute Baseline for Aged Dispatchable Generation (2022 Summer Seasonal Assessment Resource Adequacy)

[2] The weighting is an item of discussion in a potential workshop on prioritization.
[3] Thirty years is generally recognized as a typical useful life of dispatchable generation facilities.
[4] https://www.ercot.com/files/docs/2019/11/04/RESOURCE_ASSET_REGISTRATION_FORMS.zip

Resource Type	Summer Capacity (MW)	Average Age	% of Total	Example Average Startup Time[5] (min)	Baseline Resource Attribute ((%*Avg Startup)/4=Baseline)
Coal	10,140	39	41%	1,080	442.8
Gas Combined Cycle	1,846	43	8%	180	14.4
Gas Simple Cycle	1,895	40	8%	20	1.6
Gas Steam Turbine	10,657	54	43%	1,080	464.4
Totals	24,538	44	100%		**Weighted Avg 231 minutes**

GRIT proposes that the resource attribute metrics be calculated across the weighted average for each resource type.[6] For example, a startup time for a natural gas steam turbine or coal driven steam turbine can range from one to more than 12 hours while frame gas turbines in simple cycle can start in 20 to 30 minutes depending on its operational status and startup sequence.[7] For purposes of addressing system needs of dispatchability, GRIT recommends utilizing the **cold start** scenario when calculating the weighted average of the aged generation (i.e., generation facilities that have been operating for 30 years or more). In the example below, the applicant would receive a factor based on how many times faster a unit can start to address system needs.

Example Formula for startup improvement factor:

$$\frac{\text{(Weighted Average startup time of 30+ year generation facilities in ERCOT)}}{\text{(Startup Time of Texas Energy Fund Applying Technology)}}$$

So, if the weighted average startup time across the aged fleet is 231 Minutes and the applying technology can start in 10 minutes. The Improvement factor for startup would equal 23.1. GRIT requests a workshop dedicated to the prioritization metrics proposed above. This would allow in depth examples of all the metrics proposed and their associated calculations.

[5] Estimated values to be substituted for actual RARF data in actual calculations.
[6] These calculations are for the purpose of explanation. A technical workshop would be necessary to dive into each metric proposed.
[7] https://www.eia.gov/todayinenergy/detail.php?id=45956

B. ***What are the essential components of a rule to implement this program?***

1. Expedited Interconnection Approval for Loan Recipients

GRIT encourages the Commission to ensure that loan recipient projects that are energized in testing receive expedited interconnection approval from ERCOT and transmission service providers to reach their Commercial Operation Date ("COD"). Projects that have entered the energized in testing phase should be accelerated through the final testing stages to ensure that megawatts are delivered to the grid as quickly as possible.

2. Application Deadline for Loan Applicants

GRIT encourages the Commission to adopt a firm window for submitting loan applications. Language in Senate Bill 2627 states that,

> *"Not later than June 1, 2024, the Public Utility Commission of Texas shall begin accepting loan applications for loans authorized by Subchapter A, Chapter 34, Utilities Code, as added by this Act. Not later than December 31, 2025, the Public Utility Commission of Texas shall approve or deny each loan application and disburse initial loan funds for each approved applicant."*

The Commission should specify the beginning and ending dates that it will accept loan applications. To ensure the Commission has enough time to adopt rules and procedures to implement the loan program, setting June 1, 2024, as the beginning date that it will accept applications seems the most reasonable. To ensure that applicants have sufficient time to prepare and submit completed loan applications and that the Commission has adequate time to evaluate project applications and meet the December 31, 2025, deadline to approve or deny applications and disburse loan funds, GRIT suggests a loan application submission deadline of November 1, 2025.

C. ***How should the PUC interpret the term "primarily" in PURA § 34.0106(b)(1) when considering generation associated with private use networks and industrial loads?***

1. Allow Proposals for Excess Dispatchable Generation Capacity within Private Use Networks ("PUNs") and Resources Behind an Industrial Customer Meter to Participate in Loan Program

PURA § 34.0104 allows the Commission to provide loans to finance upgrades to eligible existing dispatchable generation facilities or the construction of new eligible dispatchable electric

generating facilities providing power for the ERCOT power region. Subsection (b)(1) specifies that to be eligible for funding from the Texas Energy Fund, the facility cannot have been included in the ERCOT Capacity Demand and Reserves ("CDR") Report before June 1, 2023, thereby ensuring that only new projects are eligible for loans through the Fund.

PURA § 34.0106(b)(1) prohibits the Commission from providing loans or grants from the Texas Energy Fund for a facility that will be used *primarily* to serve an industrial load or PUN.[8] The legislative intent of SB 2627 is to fund new dispatchable capacity available to the ERCOT grid, which is essential for sustaining load growth in Texas. Building dispatchable generation that can both reduce load on the grid and provide excess capacity to the grid provides value to ERCOT and furthers the goals of SB 2627.

2. Eligibility of Excess Dispatchable Generation Capacity Deployed in a PUN

GRIT supports comments filed by Texas Industrial Energy Consumers ("TIEC") in advance of the September 21st workshop regarding the opportunity for excess dispatchable generation capacity in a PUN that can be exported to the grid to participate in the loan program.[9] GRIT agrees that a reasonable interpretation of PURA § 34.0106(b)(1) in the Commission's proposed rule is that excess capacity is eligible because it would not be used "primarily to serve an industrial load or private use network" since it would be exported to be used by others.

ERCOT already includes the installed capacity of generation facilities in PUNs in the CDR report. Section 10.3.2.4 of the ERCOT Nodal Protocols outlines the methodology for accounting for net generation capacity in PUNs in the CDR report: Resource Entities within a PUN must submit the Declaration of Private Use Network Net Generation Capacity Availability annually, projecting changes in net generation capacity. ERCOT utilizes these forecasts for the CDR report, recognizing excess generation capacity in PUNs as a part of ERCOT's summer and winter available capacity.

3. Eligibility of Other Behind-the-Meter Dispatchable Generation Capacity

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[8] A PUN refers to an electric network connected to the ERCOT Transmission Grid that contains load that is not directly metered by ERCOT.

[9] *See Texas Industrial Energy Consumers' Proposed Topics and Questions for Workshop*, Project No. 54999 (Sept. 15, 2023).

In addition, the language in PURA § 34.0106(b)(1) should not preclude eligibility of proposed dispatchable generation facilities behind the meter of industrial load if that generation facility meets specified criteria to demonstrate that it is not used primarily to serve that industrial load.

Whereas in PUNs, load is sited behind a generation resource's Point of Interconnection, dispatchable generation may also be sited behind a customer's Delivery Point meter ("behind-the-meter" or "BTM" generation) and serves purposes that are not "primarily" to serve an industrial load. For example, highly flexible diesel or gas generation sited BTM is typically used solely to provide backup power services to the industrial load only during times when upstream transmission and distribution infrastructure are not available to deliver power from the grid. All other run-hours from these generation facilities are operating to serve dispatchable generation to the grid.[10] Thus, dispatchable BTM generation should be eligible to apply for the loan program, subject to meeting certain criteria to demonstrate that it is not being "used primarily to serve an industrial load."

First, GRIT recommends the Commission require proposed BTM generation projects that are registered with ERCOT as a Generation Resource be included in a post-June 1, 2023, CDR report. The total capacity estimate in the CDR report includes the Seasonal net max sustainable rating for the Peak Load Season, as reported in the RARF for each operating Generation Resource. Accordingly, the net max sustaining rating for Peak Load Season for proposed Generation Resources that are behind a customer's Delivery Point meter are included in the CDR as installed capacity available in the ERCOT market. Proposed BTM generation projects meeting these criteria therefore would primarily be used for ERCOT market participation and would otherwise operate for onsite resiliency during power outages or planned and unplanned maintenance outages on upstream utility distribution equipment. Second, for proposed BTM generation facilities that are not registered as Generation Resources (i.e., settlement-only resources), GRIT recommends that

[10] See GRIT's filing in Project 54999 on September 15, 2023, for comments on the split between run-hours for outage coverage versus run-hours to support the grid. For Generation Resources, run-hours to support the grid might include energy and ancillary services provision through direct participation in the ERCOT markets. For settlement-only resources, run-hours to support the grid would include participation in the Emergency Response Service (ERS), "displaced" energy, and export energy. As an ERS resource, the dispatchable generation is called upon by ERCOT to help mitigate the risk and impacts of an Energy Emergency Alert. Displaced energy refers to the load reduction that is achieved through the dispatchable generation while export energy refers to the net generation above the host customer's load upstream onto the grid. In both cases, the energy is dispatched in response to ERCOT energy price signals that indicate the need for additional response to balance real-time supply and demand. Any run-hours during 4CP hours are also necessarily supportive of grid reliability, as the ERCOT 4CP design is specifically intended to drive market response to periods when electricity demand is the highest.

the Commission adopt a 10% capacity factor cap to ensure that proposed generation projects to be used for load reduction are being operated to actively support the grid and not primarily for baseload service to the onsite industrial load. In the CDR report, settlement-only resources are counted as reductions in peak load via 4CP netting and serve as load modifiers for ERS participation. Specifically, most fossil fuel SODGs are emergency standby generators or participate in Demand Response programs and ERS via on-site load reductions, which exclude them as capacity in the reserve margin calculations. By adopting both criteria, the Commission will be establishing reasonable bounds around the exclusion of resources being "used primarily to serve industrial load" while meeting the intent of the legislation to enhance grid resilience and reliability.

D. Eligibility for Aggregations of Generators

Applicants should be permitted to aggregate a portfolio of generators to be collectively defined as a "facility" for meeting the minimum 100 MW capacity threshold included in PURA § 34.0104. This clarification will give the Commission needed flexibility to consider all energy solutions to enhance reliability, resiliency, and affordability for the grid and consumers, especially resources sited in congested areas like Houston where new large-scale projects are difficult to develop. An aggregated portfolio of generators brings unique attributes to the grid that could be a preferred solution compared to a single large-scale generator. A portfolio of generators, for example, could enhance the geographic diversity of generation thus more broadly and effectively targeting local and regional reliability needs and resources essential for operations. Leveraging smaller scale, modular and redundant generators also provide a shorter lead time energy solution decreasing the time it will take to achieve commercial operations.

III. COMPLETION BONUS GRANTS

A. *What are the essential components of a rule to implement the completion bonus grant program?*

1. Interconnection for Texas Energy Fund Financed Projects

GRIT recommends that the Commission specify a standardized definition of *interconnection* for the purposes of completion bonus grant qualification. Specifically, GRIT recommends that "interconnection" mean the date that a project achieves its COD. Because achieving the COD is a

tangible indicator of project readiness and a prerequisite to demonstrate the project's operational reliability, using the COD as the date of interconnection for purposes of qualifying for a completion bonus awards applicants for good-faith progress while excluding external delays in the interconnection process.

If loan program applicants meet the specified in-service deadlines, GRIT recommends that they be eligible to apply for a completion bonus grant as well.

IV. TEXAS BACKUP POWER PACKAGE PROGRAM

A. *What are the essential components for rules establishing procedures for grants and loans under this program?*

PURA § 34.0104 authorizes the Commission to provide loans and grants from the Texas Energy Fund for backup power packages, which are stand-alone, behind-the-meter, multiday backup power sources that can be used for islanding. A grant provided under this program is capped at $500/kW. The Commission should focus on implementation of the program via up-front construction grants to maximize the value of the funds for participants and to accelerate needed deployment of resiliency assets on the grid.

1. Implementation of the 2.5 MW Cap

PURA § 34.0204(4) states that the Commission may provide grants to support systems "designed so that one or more packages can be aggregated on-site to serve not more than 2.5 MW of load at the host facility." This criterion does not limit the total capacity of the backup power package system. That is, the language provides for backup power package systems to be sized greater than 2.5 MW as long as the system is "designed…to serve not more than 2.5 MW of load at the host facility." There are numerous instances that may warrant a backup power package system to be sized greater than 2.5 MW while being designed to serve not more than 2.5 MW of load at the host facility.

A facility may have a need to procure capacity greater than its maximum load as a means to achieve additional onsite resiliency and reliability via redundant systems. The procurement of this additional capacity should not disqualify a project from accessing incentive dollars if the system is designed to serve not more than 2.5 MW of load at the host facility. For example, eligible facilities under PURA § 34.0202 encompass a range of critical infrastructure (e.g., emergency shelters, emergency operation centers, food preparation and storage facilities, hospitals, nursing

homes, other health care facilities, police and fire stations, waste storage and treatment facilities, water and wastewater treatment facilities, etc.). These facilities may desire to meet certain levels of reliability, such as an N-1 reliability standard. Maintaining an N-1 reliability standard enables a facility to withstand, at all times, an unexpected outage of the largest generator in the backup power package system. Some eligible facilities may even demand a higher level of reliability and thus greater redundancy. A critical facility, for example, may have a 2.5 MW load. If an associated backup power package system is based on utilizing 625 kW generators, then the facility will need to deploy five generators totaling 3.125 MW to achieve N-1 reliability. The entire 3.125 MW system is designed to serve the 2.5 MW of load at the host facility, and thus, the entire system should be eligible for a grant.

PURA § 34.0204(5) also states that a backup power package provide power sourced from a combination of natural gas or propane with photovoltaic (PV) panels and battery storage. The nameplate capacity of a backup power package system that includes natural gas or propane, PV panels and battery storage may not be equivalent to the host facility's load demand based on the energy sources operating limitations while also meeting PURA Section 34.0204(3) (i.e., capable of operating for at least 48 continuous hours). For example, a critical facility may have a 2.5 MW load. Due to the intermittency of PV panels and temporal discharge limitations of battery storage, the backup power package may require capacity greater than 2.5 MW of energy resources. If the backup power package system is based on utilizing 625 kW generators, the facility may need a minimum of four generators totaling 2.5 MW to ensure 48 hours of operations (possibly more to achieve the needed level of reliability and resiliency) with additions of PV and battery storage thus justifying a total capacity need greater than 2.5 MW. Similarly, backup generators are typically deployed in modular blocks and may not neatly fit into a 2.5 MW segment. For example, a 2.2 MW facility seeking a backup power package consisting of 1 MW modular block generators will need 3 MW of deployed capacity. A facility's unique site constraints (e.g., parcel size, parcel gradient, building orientation, usable space, roof configuration, etc.) will also factor into the configuration of the backup power package and the mix of energy sources thus influencing the package's total nameplate capacity.

Furthermore, many facilities "on which communities rely for health, safety, and well-being" [11] can easily exceed a 2.5 MW load. These facilities should be considered an eligible facility under

[11] Section 34.0202 of Subtitle B, Title 2 of the Public Utilities Code

PURA § 34.0202 and at a minimum provided the opportunity to access associated grants for a portion of the backup power package system that serves 2.5 MW of host load. PURA § 34.0204(4) does not constrain the size of the eligible host facility or the size of the backup power package system. Rather, it constrains what portion of the backup power package system is eligible for a grant thus, the portion of the overall backup power package that serves 2.5 MW of load at the host facility and meets the requirements of the PURA § 34.0204 should be eligible for a grant.

B. ***What application guidance will potential applicants require?***

1. <u>Texas Backup Power Packages Should Be Allowed to Provide BTM Services</u>

PURA § 34.0204(6) provides that funding for the Texas Backup Power Package Program cannot be "used by the owner or host facility for the sale of energy and ancillary services." The Commission should provide guidance to clarify that this exclusion is limited to the sale of energy or ancillary services into the ERCOT market. That is, applicants should be allowed to combine a Commission grant with the savings or revenues from BTM services, like Emergency Response Service ("ERS"), peak shaving, and displaced energy (i.e., load reductions supported by generation and storage), to deploy the necessary resources.

GRIT members have already identified potential customers who are not interested in pursuing the grant without being allowed to utilize these BTM services, as the max grant of $500/kW alone will not cover what is required to make a backup power package economic given the technology requirements in PURA § 34.0204(5). GRIT's proposed clarification aligns with the goal of the program to rapidly and cost-effectively ensure the reliability and resiliency of the Texas grid.

Furthermore, because legislative intent clearly supports the subsidized entry of resources into the energy and ancillary services markets, we propose that the Commission include definitions for the purpose of the rule implementing the Texas Backup Power Program that "energy" and "ancillary services" mean "energy sold to ERCOT via an Energy Offer Curve as defined in ERCOT Nodal Protocols Section 2" and "Ancillary Services as defined in ERCOT Nodal Protocols Section 2".

Peak shaving and displaced energy are both services that are provided without direct participation in the ERCOT market via the submission of an Energy Offer Curve. Peak shaving

benefits are settled with the host customer while displaced energy is settled with the customer's Retail Electric Provider ("REP"). ERS is not an ancillary service as defined in the ERCOT Protocols:

> Emergency Response Service (ERS)
> An emergency service consistent with P.U.C. SUBST. R. 25.507, Electric Reliability Council of Texas (ERCOT) Emergency Response Service (ERS), to be deployed by ERCOT to help prevent or alleviate an actual or anticipated Energy Emergency Alert (EEA) event. *ERS is not an Ancillary Service. (emphasis added).*

Participation in the ERS program does not constitute a sale of ancillary services nor does it require the submission of an Energy Offer Curve to sell energy that gets called online during EEA events.

V. CONCLUSION

GRIT appreciates the opportunity to submit these recommendations for the implementation of SB 2627. As the Commission continues to move forward with Project No. 54999 and related efforts, GRIT is committed to supporting the Texas Energy Fund Implementation effort to ensure improved grid reliability, resiliency, and stability.

Respectfully submitted,

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