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PUC DOCKET NO. 51575

APPLICATION OF ENTERGY TEXAS, INC. TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY TO DEPLOY NATURAL GAS-FIRED DISTRIBUTED GENERATION AND STATEMENT OF INTENT FOR RATE SCHEDULE UODG	§ § § § § § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

ENTERGY TEXAS INC.'S APPLICATION AND STATEMENT OF INTENT

Entergy Texas, Inc. ("Entergy Texas," "ETI," or the "Company") files this Application seeking amendment of its Certificate of Convenience and Necessity ("CCN") to own and operate up to 75 MW of natural gas-fired distributed generation to be installed at commercial and industrial customer premises, as well as a statement of intent for approval of the rate schedule UODG (Utility-Owned Distributed Generation) and associated Customer Agreement. In support, ETI respectfully shows as follows:

I. STATEMENT OF JURISDICTION

The Public Utility Commission of Texas ("Commission" or "PUC") has exclusive original jurisdiction over this matter pursuant to sections 14.001, 37.051, 37.053, 37.056, 37.058(b), and 39.452(j) of the Public Utility Regulatory Act ("PURA").[1] ETI submits this Application consistent with the requirements of 16 Tex. Admin. Code ("TAC") § 25.101(b)(2).

With regard to review of proposed Rate Schedule UODG, the Commission has exclusive original jurisdiction over this Application for service provided to ETI's environs customers and to customers within the corporate limits of those cities that have ceded their regulatory jurisdiction to the Commission pursuant to PURA §§ 32.001(a) and 36.001. ETI is also filing this Application with all of the municipalities that retain exclusive original jurisdiction over

[1] Public Utility Regulatory Act, Tex. Util. Code §§ 11.001-66.016.

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ETI's rates within their corporate limits pursuant to PURA § 33.001. ETI anticipates that it will appeal the actions of its original jurisdiction cities to the Commission and that it will seek consolidation of those appeals with this Docket pursuant to the Commission's appellate authority under PURA § 32.001(b).

II. DESCRIPTION OF APPLICANT & AUTHORIZED REPRESENTATIVES

Entergy Texas provides fully bundled electric delivery service to approximately 461,000 customers across 27 counties in Southeast Texas. All of Entergy Texas's retail customers are affected by this application.

Entergy Texas's business address is 350 Pine Street, Beaumont, Texas 77701; its telephone number is (409) 838-6631. Its authorized representatives in this proceeding are:

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ETI requests that the Commission, the presiding officers, the State Office of Administrative Hearings, the Commission Staff, and the parties serve all documents (orders, discovery, motions, etc.) related to this Application on Mr. Hoyt's office, as listed in the previous paragraph.

III. OVERVIEW OF THE APPLICATION

A. Deployment of Natural Gas-Fired Distributed Generation

This Application requests a determination from the Commission that ETI's ownership and operation of up to 75 MW of natural gas-fired distributed generation will serve the public convenience and necessity. Approval of this Application will allow ETI to own and operate clean, natural gas-fired distributed generators of varying sizes, generally 100 kW to 10 MW, located at host customers' premises (installed on the Company's side of the electric meter). The distributed generation will supply a portion of ETI's long-term resource needs, be available to provide capacity and energy benefits to all ETI customers, and enhance the resiliency of ETI's electric grid. During normal grid conditions, ETI would control the generation to provide capacity, energy, and ancillary services to the electrical grid or to otherwise help manage demand. During an outage, the distributed generators would be available to supply backup electric service to host customers, allowing them to continue to provide valuable goods and important services to the community while service to the larger area is restored. Because the proposed fleet of distributed generation will be used to provide backup electric service to host customers during a grid outage, ETI refers to the fleet of distributed generation as the "Power Through" fleet throughout the Company's Application and supporting materials.

Because host customers enjoy the availability of these resources during an outage, the Company proposes that host customers be charged for backup electric service availability. ETI

proposes to do so by including the entire cost of installing, operating, and maintaining the Power Through generators in rates in a subsequent proceeding and charging the host customers a separate fee for backup electric service. The revenues received from host customers would then be used as an offset to ETI's revenue requirement when setting base rates. The Power Through distributed generators would therefore provide backup electric service at a cost less than what a host customer would pay if it were to own and operate a comparable generator solely for its own backup power supply.

For the reasons summarized in this Application and detailed throughout this filing, ETI's deployment of a fleet of Power Through generators will provide a number of benefits to the Company and its customers, including:

- economic, incremental peaking and reserve capacity that will satisfy a portion of ETI's reliability requirements and mitigate exposure to peaking energy prices;
- a more resilient grid to facilitate restoration efforts following severe weather events or other major outages;
- a diverse mix of highly flexible and reliable resources that can be used to support integration of intermittent resources (*e.g.,* solar photovoltaic) and rapidly respond to changing market conditions;
- capability to reduce distribution infrastructure costs and manage transmission constraints; and
- a reliable, cost-effective supply of backup electric service for host customers, which will allow them to continue providing valuable products and services to customers at large during an outage event.

Overall, the deployment of up to 75 MW of distributed generation will help ETI meet its resource planning needs. ETI's primary objectives in its resource planning process are:

- ***To serve customers' power needs reliably***, helping to meet the energy needs of the homes, businesses, and communities ETI serves now and in the future;
- ***To reliably provide power at the lowest reasonable supply cost***, by pursuing a diverse mix of energy resources, new generation techniques, and customer-centric technological innovations; and
- ***To mitigate exposure to risks that may affect customer cost or reliability***, keeping energy as affordably priced and reliable for ETI customers as possible.

Applying these objectives, ETI forecasts that it needs additional capacity resources of approximately 133 MW by 2022, and approximately 1.4 gigawatts by 2030. This need is driven by expected customer load growth in combination with planned unit deactivations and the expiration of purchased power agreements. Moreover, ETI has an appreciable current need for peaking and reserve capacity, which will be met, in part, by the deployment of the Power Through fleet.

B. Rate Schedule UODG and Associated Customer Agreement

It is critical that ETI be able to inform interested customers of the estimated cost of backup electric service using a Power Through generator and how they would be charged. Thus, successful deployment of Power Through distributed generators requires that the Commission decide in this proceeding how charges will be calculated and recovered from host customers, which is why ETI also proposes approval of Rate Schedule UODG and an associated Customer Agreement as part of this proceeding. Under Rate Schedule UODG, host customers will be charged based on a portion of the associated equipment, installation and interconnection capital

costs of Power Through generators as well as ongoing non-fuel operating and maintenance ("O&M") expenses via a monthly charge that is calculated and applied similar to how additional facilities charges are calculated and applied as revenues to offset costs of distribution and transmission assets that are added to serve specific customers today. The amount of the monthly charge will reflect the capital and non-fuel O&M costs of the host customer's Power Through generator(s) used to supply backup electric service that exceed ETI's avoided cost of a larger, central station peaking and reserve resource – a combustion turbine ("CT") – grossed up for avoided transmission and distribution losses. The Customer Agreement specifies the terms and conditions for installing and operating a Power Through generator at a host customer's site and how the host customer will be billed for the supply of backup electric service via a Power Through resource. ETI requests an effective date of January 29, 2021 for Rate Schedule UODG and the associated form Customer Agreement.

ETI also proposes that energy margins earned by a Power Through resource be allocated between the host customer and all other customers and credited on the host customer's bill. Consequently, ETI requests a good cause exception to 16 TAC § 25.236(a)(8)(B) and (a)(9) in the Commission's fuel rule so that host customers would be able to retain a share of the margins earned by Power Through generators in an amount proportionate to their cost responsibility for the Power Through resource, which exceeds 10%. The margins would be determined by comparison of the generation offer for a Power Through generator to revenues received when that offer is selected for dispatch by the Midcontinent Independent System Operator, Inc. ("MISO").

ETI contemplates that the costs for the deployment of the Power Through fleet will be recovered through rates like any other generation asset, but a portion of the costs will be offset

by revenues received from host customers taking backup electric service supplied by Power Through resources pursuant to Rate Schedule UODG.

IV. IDENTIFICATION OF WITNESSES AND SUBJECTS ADDRESSED

ETI's Application includes the written direct testimonies and exhibits of the following witnesses:

1. **Stuart O. Barrett** – Mr. Barrett is Vice President, Customer Service of ETI. He provides an overview of the Application and testimony of the other witnesses. Mr. Barrett also describes the requested regulatory approvals and why clean, natural gas-fired distributed generators are well-suited to meet customers' changing expectations as technology and the energy grid evolve.

2. **Abigail B. Weaver** – Ms. Weaver is Director of Resource Planning & Market Operations for ETI. She explains how a fleet of Power Through distributed generation will enhance the resiliency of ETI's grid and meet a portion of the capacity and energy needs of all of ETI's customers while also being available to supply backup electric service to host customers in times of outage. Ms. Weaver also quantifies certain components of the value ETI's customers can expect from deployment of natural gas-fired distributed generation, which is used to determine how costs will be allocated between host customers and all other customers. Further, Ms. Weaver discusses certain technical characteristics of the Power Through resources and provides the estimated capital and operations and maintenance expenses associated with owning and operating up to 75 MW of distributed generation.

3. **Jeffrey R. Knighten** – Mr. Knighten is Director, Regulatory Affairs for ETI. He supports Rate Schedule UODG, which is designed to recover a portion of the Power Through costs from the host customers, and the associated Customer Agreement.

4. **Allison P. Lofton** – Ms. Lofton is Manager, Regulatory Filings for ETI. She describes the recovery of and accounting for the costs, including the associated estimated revenue requirement and customer bill impacts, of deploying 75 MW of distributed generation.

V. NOTICE AND INTERVENTION DEADLINE

As this is a CCN application for generating units at multiple existing sites coupled with a new, voluntary tariff, ETI proposes to provide notice consistent with 16 TAC § 22.52(a), "Notice in Licensing Proceedings" and 16 TAC § 22.55, "Notice in Other Proceedings." Specifically,

ETI proposes to provide notice of this filing by a one-time publication in newspapers of general circulation in ETI's service area. ETI will also provide notice of the Application to parties to the Company's most recent base rate case,[2] which will include notice on the Office of Public Utility Counsel as specified by 16 TAC § 22.74(b), as well as the Texas Parks and Wildlife Department ("TPWD"), the Department of Defense Siting Clearinghouse, and municipal and county officials. To the extent necessary, ETI requests a good cause exception to 16 TAC § 22.52(a)(1)(E) with regard to provision of an environmental impact study or assessment to the TPWD. ETI does not contemplate a need to commission such a study/assessment because the Power Through generators will be sited at existing commercial and industrial facilities. This proposed method of notice is consistent with the notice approved in Docket No. 44800, *Application of El Paso Electric Company to Implement a Voluntary Community Solar Pilot Program in Texas,* where El Paso Electric Company also proposed a new, voluntary tariff.

ETI's proposed form of notice is attached as Attachment A. Pursuant to 16 Tex. Admin. Code § 22.52(a)(1)(A), ETI proposes an intervention deadline of 45 days following the filing of this Application.

VI. DOCUMENTS FILED UNDER SEAL AND MOTION FOR PROTECTIVE ORDER

Portions of this filing constitute highly sensitive confidential materials and have been filed under seal. These materials will be made available to Commission Staff and any intervenors upon entry of an appropriate Protective Order ensuring preservation of the confidentiality of these materials. ETI requests that the Commission adopt its standard

[2] *Entergy Texas, Inc 's Statement of Intent and Application for Authority to Change Rates*, Docket No. 48371, Order (Dec. 20, 2018).

Protective Order. ETI is also submitting as part of Attachment B its statement of counsel supporting the confidentiality of certain documents submitted with its filing.

VII. CONCLUSION AND PRAYER

ETI respectfully requests that the Commission grant the relief requested in this Application, including:

a) approval of an amendment to ETI's Certificate of Convenience and Necessity to own and operate up to 75 MW of natural gas-fired distributed generation;

b) approval of Rate Schedule UODG and the associated form Customer Agreement;

c) approval of ETI's proposed method and form of notice;

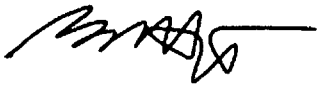
d) grant the request for good cause exceptions to 16 TAC § 25.236(a)(8)(B) and (a)(9) and, to the extent necessary, 16 TAC § 22.52(a)(1)(E);

e) entry of the Commission's standard protective order; and

f) such other relief to which ETI may be entitled.

December 9, 2020

Respectfully submitted,



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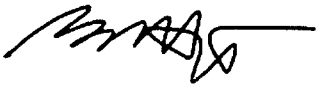
Attorneys for Entergy Texas, Inc.

Certificate of Service

I hereby certify, by my signature below, that a true and correct copy of the foregoing petition, including attachments, was served on all parties to ETI's last base rate case (Docket No. 48371), the Office of Public Utility Counsel, and the cities in ETI's service territory, by agent, courier receipted delivery, first class mail, certified mail return receipt requested, registered mail, electronic mail or by facsimile transmission this 9th day of December, 2020.



By:_____
George Hoyt

NOTICE OF NEW RATE REQUEST AND CERTIFICATE AMENDMENT

On December 9, 2020, Entergy Texas, Inc. ("ETI" or "the Company") filed an Application with the Public Utility Commission of Texas ("Commission") requesting to amend its Certificate of Convenience and Necessity ("CCN") permitting ETI to deploy natural gas-fired distributed generation and statement of intent for approval of Rate Schedule UODG (Utility-Owned Distributed Generation) and an associated form Customer Agreement. ETI's Application was assigned Docket No. 51575 and is styled *Application of Entergy Texas, Inc. to Amend Its Certificate of Convenience and Necessity to Deploy Natural Gas-Fired Distributed Generation and Statement of Intent for Rate Schedule UODG.* In this Application, ETI seeks to own and operate up to 75 MW of natural gas-fired distributed generation ("DG") located at the premises of to be determined hosting commercial and industrial customers throughout ETI's service territory. The total estimated annual non-fuel revenue requirement associated with ETI's proposed ownership and operation of 75MW of DG is approximately $16 million, excluding estimated Schedule UODG revenues that will offset that amount. Rate Schedule UODG is a new voluntary rate schedule that will be charged only to eligible commercial and industrial customers who elect to subscribe for backup electric service supplied by the DG. ETI is requesting that Rate Schedule UODG be effective beginning January 29, 2021.

The proposed fleet of DG will supply a portion of ETI's long-term resource needs, be available to provide capacity and energy benefits to all ETI customers and enhance the resiliency of ETI's electric grid. In addition, during an outage, the DG will be available to supply backup electric service to host customers and allow them to continue to provide vital goods and services to the community while service to the larger area is being restored.

If the PUCT adopts the 45-day intervention deadline proposed in the Application, the deadline to intervene will be January 25, 2020, and a letter requesting intervention should be received by the PUCT, at its address provided below, by that date. A prehearing conference is expected to be held in Austin, Texas in the near future. Persons who wish to intervene in or comment upon these proceedings, or obtain further information, should contact the Public Utility Commission of Texas, P.O. Box 13326, Austin, Texas 78711-3326, or call the PUCT's Office of Consumer Protection at 512-936-7120 or 1-888-782-8477. Hearing and speech impaired individuals with text telephones (TTY) may contact the PUCT at 512-936-7136 or use Relay

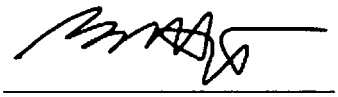
Texas (toll-free) 1-800-735-2988. All communications should refer to Docket No. 51575, and any request to intervene in that proceeding should include an email address and fax number (if available) as contact information. Persons with questions or who want more information about this Application may contact ETI at 350 Pine Street, Beaumont, Texas 77701, or call (409) 981-2602 during normal business hours. A complete copy of the Application is available upon request. A copy of the Application may also be viewed on the Commission's webpage at www.puc.state.tx.us. The Commission maintains an electronic copy of all filings on the "Interchange Filing Search" section of its webpage. The control number for this proceeding is 51575.

List of Confidential (Protected Material) / Highly Sensitive (Highly Sensitive Protected Material) Information

The following is a list of testimony, exhibits and workpapers that are included in this Application and considered by Entergy Texas, Inc. ("the Company") to be Confidential (Protected Material) or Highly Sensitive (Highly Sensitive Protected Material) information, the protected designation, the reason for protection, and a list of the witnesses sponsoring the Confidential (Protected Material) or Highly Sensitive (Highly Sensitive Protected Material) information or the schedule to which the information relates. The Company considers the information listed below to be commercial or financial information or customer specific information that is exempted from disclosure under the Public Information Act. TEX. GOV'T CODE ANN. §§ 552.101 and 552.110 (Vernon 2012); TEX. UTIL. CODE § 32.101(c) (Vernon 2007).

DOCUMENT	DESIGNATION	REASON FOR PROTECTION	SPONSOR
WP/Weaver Testimony, Tables 2 & 3 – Current Deactivation Assumptions and PPA Expirations	Highly Sensitive Protected Material	Commercially Sensitive Information	Weaver, Abigail B
Exhibit ABW-2 – ETI Projected Capacity Position	Highly Sensitive Protected Material	Commercially Sensitive Information	Weaver, Abigail B
WP/Weaver Direct/Tables 1, 2, 3 and 5 – Power Through Testimony	Highly Sensitive Protected Material	Commercially Sensitive Information	Weaver, Abigail B
WP/Weaver Direct/Q24 – HEB Support	Highly Sensitive Protected Material	Commercial/Financial Information	Weaver, Abigail B
WP/Weaver Direct/Q27 and Q29 – ETI CT Value and Line Losses	Highly Sensitive Protected Material	Commercial/Financial Information	Weaver, Abigail B
WP/Weaver Direct/Q28 – BP21 Technology Assessment	Highly Sensitive Protected Material	Proprietary and Commercial/Financial Information	Weaver, Abigail B
WP/Weaver Direct/Q32 – ETI - Power Through and CT Comparison	Highly Sensitive Protected Material	Commercially Sensitive Information	Weaver, Abigail B
WP/APL-1 – Power Through Financial Model	Highly Sensitive Protected Material	Commercial/Financial Information	Lofton, Allison P
WP/JRK-1/2 – ETI Average Host Allocation	Highly Sensitive Protected Material	Commercial/Financial Information	Knighten, Jeffrey R

I certify that I have reviewed the documents listed above and state in good faith that the information is exempt from public disclosure under the Public Information Act and merits the applicable designation of Confidential (Protected) Materials or Highly Sensitive (Highly Sensitive Protected) Materials detailed in the Protective Order accompanying this Application.



George G. Hoyt

DOCKET NO. 51575

APPLICATION OF ENTERGY TEXAS, INC. TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY TO DEPLOY NATURAL GAS-FIRED DISTRIBUTED GENERATION AND STATEMENT OF INTENT FOR RATE SCHEDULE UODG	**§ § § § § § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

DIRECT TESTIMONY

OF

STUART O. BARRETT

ON BEHALF OF

ENTERGY TEXAS, INC.

DECEMBER 2020

ENTERGY TEXAS, INC.
DIRECT TESTIMONY OF STUART O. BARRETT
DOCKET NO. 51575

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EXHIBITS

I. QUALIFICATIONS AND PURPOSE OF TESTIMONY

Q1. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND OCCUPATION.

A. My name is Stuart Barrett. My business address is 10055 Grogans Mill Road, The Woodlands, Texas 77380. I am employed by Entergy Texas, Inc. ("ETI" or "the Company") as Vice President, Customer Service.

Q2. ON WHOSE BEHALF ARE YOU SUBMITTING TESTIMONY?

A. I am submitting this Direct Testimony to the Public Utility Commission of Texas ("PUCT" or "Commission") on behalf of ETI.

Q3. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL EXPERIENCE.

A. I graduated with a Bachelor of Science in International Trade and Finance in 1995 from Louisiana State University. In 1997, I earned a Master of Business Administration degree from the University of New Orleans. I joined Entergy Services, Inc. (now, Entergy Services, LLC ("ESL")[1]) in May 1997 as an analyst in the Accounting department. A year later, I moved to the Utility Planning group of the Finance department and was involved in the production of five-year business plans for the Entergy Operating Companies ("EOCs").[2] In July 2000, I transferred to the System Planning and Operations ("SPO") department as a Senior Analyst in the

[1] Entergy Services, LLC is a service company affiliate of ETI that provides general executive, management, advisory, administrative, human resources, accounting, finance, legal, regulatory, and engineering services.

[2] The five EOCs are ETI, Entergy Arkansas, LLC, Entergy Louisiana, LLC, Entergy Mississippi, LLC, and Entergy New Orleans, LLC.

Power Marketing and Power Contracts group. In 2008, I became Manager of Energy Analysis and Reporting, where I was responsible for gas, oil, and power settlements, and producing the monthly Intra-System Bill. In March 2010, I was promoted to Director of Commercial Operations for SPO where I procured and administered long-term supply resources and was responsible for coal supply operations. In October 2013, I accepted the position of Director of Resource Planning and Market Operations for ETI. In that role, my duties included coordinating the resource planning activities (including generation and transmission) for ETI and implementing the Company's supply plan for meeting the load and energy requirements of ETI's retail customers. In 2019, I assumed my current role as VP, Customer Service, where I manage all facets of customer service including customer support, energy efficiency, low income initiatives, and community development.

Q4. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. ETI recently executed its first successful installation of an experimental 1.2 MW natural gas-fired distributed generation ("DG") resource at an HEB grocery store in its service territory. The purpose of my testimony is to explain why that project coupled with customer interest in similar arrangements serves as a platform for broader deployment of customer-hosted "microgrids" across ETI's service territory. ETI's proposal will further modernize and enhance the resiliency of the Company's electric system, offer backup electric service to host customers who require enhanced reliability and, at the same time, address the long-term resource planning needs of ETI's broader customer base.

My testimony first provides an overview of ETI's request to amend its Certificate of Convenience and Necessity ("CCN") to deploy up to 75 MW of natural gas-fired utility-owned DG ("Power Through generators" or "Power Through fleet") to be installed at commercial and industrial customer premises. Second, my testimony explains how the Power Through fleet fits within the changing utility industry landscape and will address customers' evolving power needs. Third, I address the regulatory approvals ETI seeks pursuant to Public Utility Regulatory Act ("PURA") §§ 37.056 and 39.452(j) and explain how Power Through generators satisfy the criteria for those approvals. Last, I introduce the other witnesses supporting ETI's application.

II. OVERVIEW OF THE APPLICATION

Q5. WHAT IS THE PURPOSE OF THE COMPANY'S APPLICATION?

A. ETI's application seeks a Commission determination that the Company's ownership and operation of Power Through generators will serve the public convenience and necessity. Specifically, ETI seeks an amendment to its CCN to own and operate up to 75 MW of DG located at the premises of hosting commercial and industrial customers. As described by Company witness Abigail B. Weaver, the proposed fleet of DG will supply a portion of ETI's long-term resource needs and be available to provide capacity and energy benefits to all ETI customers. In addition, during an outage, the Power Through fleet will be available to serve the backup power needs of host customers and, in many instances, allow them to continue to provide vital goods and services to the community while service to the larger area is being restored.

Finally, to enable ETI to charge host customers for the backup electric service provided by a Power Through generator, the Company seeks approval of new Rate Schedule UODG and its associated Customer Agreement, which are attached to the Direct Testimony of Company witness Jeffrey R. Knighten.

Power Through generators will serve as customer-hosted resources in much the same way that Enchanted Rock, LLC is utilizing natural gas-fired DG to support the broader ERCOT market at the same time it supports enhanced reliability and resiliency service to individual customers. In fact, ETI has arranged to partner with Enchanted Rock, Generac, and other generator manufacturers to provide similar opportunities and benefits to ETI's customers in a collaborative manner that may not otherwise be feasible absent the Company's proposal to deploy the Power Through fleet. ETI has proven this concept with an experimental 1.2 MW utility-owned DG resource located at an HEB grocery store in The Woodlands, Texas. That DG resource provides dedicated backup electric service to the grocery store when needed and is used to serve the broader grid when it is economic to do so. With that experience in hand, the time is right for ETI to deploy, own, and operate additional DG in a manner that benefits the grid, as well as host customers.

Q6. PLEASE DESCRIBE IN MORE DETAIL THE STRUCTURE OF THE COMPANY'S PROPOSAL.

A. If approved, ETI will own and operate clean, natural gas-fired DG in sizes of 100 kW to up to 10 MW located at host customers' premises (installed on the Company's side of the electric meter). During normal grid conditions, ETI would control the Power

Through fleet to provide capacity, energy and ancillary services to the electrical grid or to otherwise help manage demand. During an outage, the generator would automatically provide backup electric service directly to the host customers' facilities until service is restored. Because host customers enjoy the availability of these resources during an outage, the Company proposes that host customers be charged for this backup electric service availability. ETI proposes to do so by including the entire cost of installing, operating, and maintaining the Power Through generators in rates in a subsequent proceeding and charging the host customers a separate fee for backup electric service associated with the DG. The revenues received from host customers would then be used as an offset to ETI's revenue requirement when setting base rates. Thus, Power Through generators efficiently meet the needs of host customers and all other customers alike by providing backup electric service to host customers during an outage and being available to provide power to the electrical grid at all other times. Power Through generators provide a unique and economic solution stemming from the ability of a single resource to serve the needs of both host customers and the broader customer base.

One of the key benefits of the Power Through generators to a host customer is the ability to obtain on-site natural gas-fired generation to provide backup electric service at a cost less than what the customer would pay if it were to own and operate an equivalent natural gas-fired backup generator solely for its own use. In order to make those arrangements for the Power Through generators, it is critical that ETI be able to inform interested customers of the estimated cost of that service and how those costs would be charged. Thus, successful deployment of the Power Through

fleet requires that the Commission decide in this proceeding how costs will be allocated to host customers as a charge for backup electric service. For this reason, ETI also requests approval of Rate Schedule UODG and its associated Customer Agreement as part of this proceeding.

Q7. WHAT REGULATORY APPROVALS DOES ETI SEEK WITH REGARD TO THE POWER THROUGH FLEET?

A. ETI's application requests (1) approval of an amendment to ETI's CCN to deploy up to 75 MW of utility-owned DG pursuant to PURA §§ 37.056 and 39.452(j), and (2) approval of Rate Schedule UODG, including the associated Customer Agreement. ETI also seeks a good cause exception to 16 Texas Admin. Code ("TAC") § 25.236(a)(8) and (9) in the Commission's Fuel Rule.

Q8. WHAT REQUIREMENTS APPLY TO THE AMENDMENT TO ETI'S CCN FOR THE DEPLOYMENT OF THE POWER THROUGH FLEET?

A. I am not a lawyer, but I understand that PURA § 37.056 sets forth the criteria for the grant or denial of a CCN or CCN amendment. It provides that the Commission may grant such relief after considering several factors, including adequacy of existing service; need for additional service; effect on the applicant or any electric utility serving the proximate area; and other factors such as community values, recreational and park areas; historical and aesthetic values; environmental integrity; and the

probable improvement of service or lowering costs to consumers.[3] PURA § 39.452(j) requires the Commission to ensure certain of the factors above (environmental integrity and probable improvement of service or lowering costs) are met and that the generating facility satisfies the identified reliability needs of the utility.[4]

Q9. WILL THE DEPLOYMENT OF UP TO 75 MW OF POWER THROUGH GENERATORS BENEFIT ETI CUSTOMERS?

A. Yes. The deployment of Power Through generators will provide a number of benefits to ETI customers, including:

- Helping to address the Company's need for long-term capacity, including peaking and reserve capacity;
- Mitigating ETI customers' exposure to capacity and energy market prices;
- Increasing ETI's generation resource portfolio diversity from supply role and locational perspectives;
- Increased reliability and grid resiliency;
- Reliable, cost-effective backup power supply for host customers; and
- Community benefits for all customers in the proximate area of the Power Through generators, including the availability of critical products and services pending system restoration.

Company witness Weaver addresses in more detail the benefits of deployment of the Power Through fleet to ETI and its customers from a resource planning perspective.

[3] PURA § 37.056(c).

[4] PURA § 39.452(j).

Q10. THOUGH MS. WEAVER PROVIDES MORE SPECIFICS ON THESE ISSUES, CAN YOU SUMMARIZE HOW THE DEPLOYMENT OF POWER THROUGH GENERATORS WILL BENEFIT ETI CUSTOMERS FROM A RESOURCE PLANNING PERSPECTIVE?

A. Yes. ETI plans its resources in an effort to serve all its customers reliably and economically while mitigating exposure to market and reliability risks. While ETI presently has sufficient resources to meet its customers' needs, ETI requires more long-term generating capacity. More than half of ETI's current capacity is from natural gas-steam units that are more than 40 years old, many of which are expected to be at the end of their economically useful lives and require deactivation in the near future. ETI also has several purchase power agreements that will be expiring. This is significant from a resource adequacy standpoint because, at the same time, ETI's load is expected to grow by 1.5% (or 52 MW) by 2022, 3.3% (or 111 MW) by 2023, and 12.6% (or 427 MW) by 2030. The deployment of Power Through generators will add capacity to ETI's portfolio on a timely basis.

Aside from overall capacity, ETI must have the right capacity mix in its portfolio to serve specific supply roles, including base load, core load-following, and peaking and reserve. ETI is currently short overall and short on base load, core load-following, and peaking and reserve supply roles. Deployment of the Power Through fleet will add resources, including peaking and reserve resources, to ETI's portfolio, increasing reliability and reducing cost risk exposure through diversification.

Q11. ARE THERE OTHER BENEFITS EXPECTED FROM THE DEPLOYMENT OF POWER THROUGH GENERATORS?

A. Yes. There are community resiliency benefits from facilities like gas stations, grocery stores, first responders, and medical facilities having the capability to operate during an outage, especially during an outage that lasts for more than a few hours to several days. For example, during an extended outage, a grocery store hosting a Power Through generator can provide supplies like water, ice, medication, and food to help serve the needs of the larger community.

III. THE POWER THROUGH FLEET FITS THE CHANGING UTILITY INDUSTRY LANDSCAPE AND WILL SATISFY CUSTOMERS' EVOLVING POWER NEEDS

Q12. WHY IS NOW THE RIGHT TIME FOR POWER THROUGH GENERATORS?

A. The U.S. energy industry is undergoing significant change driven by the development of new technology, the pace of technological change, innovation, increased customer interest around self-supply and control, changing customer expectations on resiliency, an emphasis on improving energy efficiency, replacing aging infrastructure, and uncertainty surrounding evolving standards and future environmental regulations. Put differently, technology advancements are changing the way energy is generated and supplied today, which also requires an evolution of the distribution grid.

Q13. HOW IS THE DISTRIBUTION SYSTEM EVOLVING?

A. The distribution system was developed over time to deliver energy from large substations to a service area that has expanded and changed over time. Energy has

been delivered to those substations primarily from large "central station" generating units, via the bulk transmission system. Under this traditional configuration, distribution planning has been conducted from a "top-down" lens – facilitating the delivery of energy safely from these central locations to customers. As a result, the distribution grid power flow is largely one way, and served almost exclusively by ETI's central station generating units. As new technology develops, the opportunity for incorporating DG is becoming more prevalent, and that requires a foundation for localized power to flow both ways on the distribution grid.

Through the Commission's approval of ETI's Advanced Metering System ("AMS") deployment plan in Docket No. 47416,[5] ETI is laying the foundation to further modernize its distribution grid. In its AMS Application, ETI discussed how the AMS lays the groundwork for moving beyond a largely centralized, one-way distribution grid toward a more advanced power grid and for responding to increased customer interest around self-supply and control.[6] Specifically, the AMS's two-way data transfer communications system, new head-end system,[7] and new Distribution Management System ("DMS") provide the foundation for better visibility and incorporating more automation and remote control on the distribution grid. In addition, continuing grid modernization efforts include adding LoadSEER, a spatial

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[5] *Application of Entergy Texas, Inc for Approval of Advanced Metering System (AMS) Deployment Plan, AMS Surcharge, and Non-Standard Metering Service Fees*, Docket No. 47416, Order (Dec. 14, 2017).

[6] *See id.*, Direct Testimony of Hugh Vernon Pierce at p. 7-9.

[7] The head-end system consists of hardware and software components in the data center that reliably and securely receive information from field components; transmit data to those components, and route information to the appropriate internal IT systems. Docket No. 47416, Direct Testimony of Rodney W. Griffith at pp. 25-26.

load forecasting software, and smart devices and sensors that, combined with the AMS and DMS, will allow engineers and planners to anticipate future distribution system needs, model how DG (including utility-owned DG) affect the electric grid, and set the stage for grid optimization by placing or deferring electric equipment at appropriate locations along the feeders. Future functionality of the AMS/DMS is expected to include, among other things, centralized dispatch and control of DG.[8] In the near-term, the Power Through fleet will be controlled via a dispatch system operated by SPO, which can be integrated with the other grid modernization systems as they become available.

Q14. PLEASE ELABORATE ON GRID MODERNIZATION'S EFFECT ON DISTRIBUTION SYSTEM PLANNING.

A. Traditional planning involves modeling the distribution system and developing capital projects to address area load growth based on summer and winter peaks, which are discrete moments in time. In contrast, with the deployment of the AMS, planners will have load data at much more frequent intervals, which will allow them to develop a feeder and/or area load profile and better predict future capital improvement needs, including consideration of alternative solutions that utilize DG. Moreover, as the number of DG resources increase on the distribution system, the load flows, voltage and even the load profile of individual feeders will change. The

[8] *See id*, Direct Testimony of Rodney W. Griffith at pp. 7-8.

new and nearly real-time data will be necessary to maintain, manage and plan for the distribution system.

Q15. HOW ARE CUSTOMER NEEDS AND EXPECTATIONS EVOLVING?

A. The evolution and adoption of customer-focused technology and services, both in and out of the traditional utility construct, have created a shift in customer preferences and expectations – both in terms of how the power they use is generated and the services and offerings they value from utility companies. Under the traditional electric utility service model, a utility viewed its customers' needs as largely limited to the safe and reliable, one-way delivery of energy from the utility's facilities to the customers' homes and businesses. However, from customers' viewpoints, their needs are not measured in terms of kilowatts of load (kW) or kilowatt-hours (kWh) delivered to their premises; their needs are stated in other terms. For example, retail grocers and gas stations need to have refrigerated perishable goods, business owners rely on functioning commercial equipment, medical facilities need to be able to keep the lights on and have full use of life-saving medical equipment, and communities need uninterrupted access to important goods and services.

Recent and coming technological advances mean that customers will be able to have these needs met with increasingly less reliance on the traditional one-way delivery of energy from the utility's central station facilities. Some customers are seeking to use less energy through new energy efficiency measures. Some have new uses for electricity (*e.g.*, adoption of electric vehicles). Others are seeking enhanced reliability and resiliency to continue operations and/or provide services when other

portions of the grid are without service due to planned and unplanned events. New technology developments in the utility industry are providing the means to meet those customer needs and support the overall resiliency of the grid.

In addition, the available mix of technologies and fuels used to generate electricity used in homes, factories, and businesses has changed. Today's utility customers are seeking more options in the generation and delivery of energy, including how they interact with, understand, and manage their own energy use, as well as the actual sources from which energy is derived. Increasingly, customers are becoming more interested in sourcing power from cleaner, more sustainable sources of energy, including natural gas and renewable energy, as the costs of those resources continue to decline. Technological advancements are providing the utility industry increased opportunities and alternative pathways to plan for and efficiently meet customer energy needs.

Q16. HOW DOES DEPLOYMENT OF POWER THROUGH GENERATORS FIT WITHIN THE CHANGING UTILITY LANDSCAPE AND EVOLVING CUSTOMER NEEDS THAT YOU JUST DESCRIBED?

A. The Power Through fleet fits squarely within the scope of integrating a more diverse mix of cleaner resources. The deployment of the Power Through fleet will shift a portion of supply from large, central station generation to smaller, localized generation that, as described by Company witness Weaver, will support integration of

renewable resources and address a portion of ETI's capacity needs.[9] Utility-owned DG further addresses evolving needs of some customers for enhanced reliability and resiliency, which in turn addresses the needs of communities for uninterrupted access to the goods and services provided by such customers. Finally, Power Through generators complement ETI's grid modernization efforts in that ETI will have the ability to model the benefits of DG in its distribution system planning and optimization efforts, which as described by Ms. Weaver, may eventually avoid or defer some distribution infrastructure costs.

Q17. HOW DOES THE CURRENT COVID-19 PANDEMIC AFFECT EVOLVING CUSTOMER NEEDS?

A. As the number of COVID-19 cases grows nationwide, solutions such as Power Through generators provide businesses with additional options to navigate uncertainty. Grocery stores have increased staffing and inventory to meet substantially higher customer demand. Healthcare facilities face increased levels of patients in need of care. This increased demand heightens the need for business continuity, reliability, and overall grid resiliency so that "essential" businesses can safely meet their customer needs in striving to ensure public health. The operations of "essential" businesses are evolving rapidly in response to the pandemic, necessitating the availability of business continuity options now more than ever. For

[9] In her direct testimony Ms. Weaver further notes central station generation such as modern gas-fired combined cycle gas turbines like Montgomery County Power Station will still be necessary and continue to play a major role for the foreseeable future in meeting customer load requirements.

example, assisted living facilities are able to avoid disruption to care takers, residents, and their families, the impact of which is significantly elevated in a situation involving social isolation or quarantining.

Q18. PLEASE ELABORATE ON ETI'S EXPERIENCE WITH UTILITY-OWNED DG IN ITS SERVICE TERRITORY.

A. As discussed earlier, ETI recently partnered with Enchanted Rock in installing 1.2 MW of natural gas-fired DG at an HEB location. The experimental project was an initial foray to meet growing customer interest in business continuity during power disruptions through customer-sited backup generation. During grid outages, the grocery store can operate as usual, avoid spoilage costs, and provide the surrounding community access to food, medicine, water, and other essential supplies. In addition, ETI offers the generation into the MISO market for the benefit of all customers when it is economic to do so. This experimental unit has demonstrated the unique value of leveraging a single resource to address multiple customer and resource planning needs.

Q19. HOW DOES THE ETI CUSTOMER BASE BENEFIT FROM DEPLOYMENT OF UTILITY-OWNED DG?

A. As discussed above and explained in further detail by Ms. Weaver, all ETI customers will benefit from:

- adding new, quick-response resources to satisfy a portion of ETI's need for peaking and reserve capacity in an economic manner;

- providing additional resources to help mitigate exposure to MISO's capacity market and energy and ancillary services market;
- improving grid reliability and resiliency; and
- maintaining uninterrupted access to important goods and services through planned or unplanned outages.

Q20. HOW DO HOST CUSTOMERS INDIVIDUALLY BENEFIT FROM UTILITY-OWNED DG?

A. As I mentioned previously, a host customer is able to obtain a reliable supply of backup electric service for less than the cost that the customer itself would incur to purchase, install, operate, and maintain an equivalent natural gas-fired backup generator. That means cost savings for the host customer, enhanced reliability, increased resiliency and mitigation of risks associated with business interruptions due to power outages. Further, host customers benefit from ETI's expertise and maintenance oversight of the generators using certified technicians. Moreover, monthly charges via Schedule UODG will be structured to avoid large upfront costs to host customers. In these ways, this is a unique solution that removes barriers to beneficial DG that supports the needs of both host customers and customers in general.

Q21. ON WHAT BASES DID ETI CONCLUDE THAT UP TO 75 MW IS THE APPROPRIATE AMOUNT OF DG TO DEPLOY?

A. ETI selected up to 75 MW for several reasons that reflect ETI's resource needs, the level of consumer interest, and analysis of the market for DG solutions of this type.

As to ETI's resource needs, ETI has an immediate need for capacity, including peaking and reserve capacity and will be in an overall short position for the foreseeable future. As discussed by Ms. Weaver, the Power Through generators are well-suited for serving a peaking and reserve supply role, and 75 MW is a meaningful amount that will help address ETI's resource needs.

There are several reference points on the customer interest front. First, ETI's experimental project with HEB in The Woodlands, Texas has been a success, and other customers are expressing interest in a similar arrangement. For example, my staff has recently heard from major grocery store chains, a large retail chain, independent school districts with multiple campuses, a community college with multiple campuses, a state college, a coastal port authority, a sizeable pharmaceuticals manufacturer, a local municipality, a philanthropic organization that maintains a museum and a theater, and a local official responsible for the county courthouse and jail, all interested in hosting DG as an option to address their respective need for backup power supply. See my Exhibit SB-1 documenting these customer interactions. Similarly, Buc-ee's has agreed to the installation of DG at ten of its locations in ERCOT with an interest in expanding to additional locations. Through deployment of the Power Through fleet, ETI believes it can be in a position to provide similar services to customers in its service territory while simultaneously

addressing the resource planning needs of its broader customer base and communities.

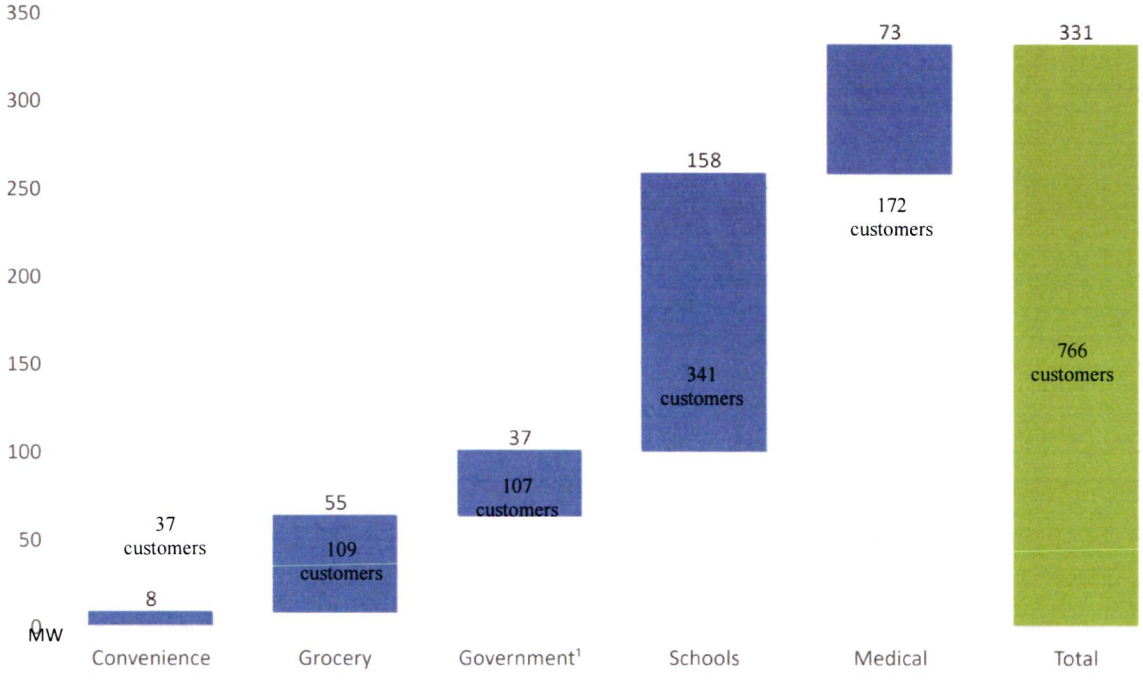
Second, the deployment of utility-owned DG to support grid reliability is widely recognized in the utility industry as a key part of the evolution and modernization of the grid that is already underway. Industry articles and whitepapers written on the subject identify medical facilities, including hospitals and senior living facilities, grocery/wholesale retail stores, and convenience stores as a few of the most likely types of customers to benefit from using Power Through generators as backup power.[10]

Public schools also stand to benefit from the use of backup generators. Cost-effective backup generation can mitigate the effect of power outages on class schedules and the potential for data loss and critical equipment damage. For example, reliable backup generation could allow fire alarms, phone systems, and computer networks to remain operational during a power outage. Further, students' education may continue uninterrupted in the event of a local outage and allow for work continuity for parents. See the letters of support from independent local school districts included in my Exhibit SB-1. In addition, schools can be used as community shelters during more widespread, longer-term outages, providing beds and meals to the local community.

[10] "*Asset-Backed Demand Response The Next Big Idea in Energy*," Microgrid Knowledge, Sept. 13, 2019; "*E Source Market Research Reveals That Power Outages Cost Businesses Over $27 Billion Annually Winter Storm Jonas Makes It Worse,*" Wooten, Kim, E Source, Jan. 27, 2016; "*Microgrids for the Retail Sector*" Maloney, Peter, Microgrid Knowledge, 2019; "*The Affordable Microgrid Securing Electric Reliability through Outsourcing*," Microgrid Knowledge, 2018; "*Microgrid Guide for Publicly Owned Critical Infrastructure*," Oueid, Rima Kasia, U.S. Department of Energy, 2018.

As shown in Table 1 below, ETI's customer makeup includes over 766 customers of those types with loads exceeding 330 MW in aggregate, such that 75 MW falls well within the market for such solutions. Notably, this table does not present an exhaustive depiction of all the customer groups that might sign up for Power Through generators.

Table 1: Number of Customers and MW By Industry



[1] Not all governmental customers may be captured based upon the rate categories under which they are currently classified.

While the Company believes the level of customer interest and size of the potential pool of customers is more than sufficient to support deployment of 75 MW of Power Through generators, ultimately, ETI will only deploy as much capacity as eligible customers are willing to host.

IV. REGULATORY APPROVALS

Q22. DO YOU BELIEVE ETI'S APPLICATION SATISFIES THE CRITERIA YOU DESCRIBED EARLIER FOR THE GRANTING OF A CCN AMENDMENT?

A. Yes. I believe ETI's deployment of the Power Through fleet satisfies the criteria set out in PURA § 37.056, as I explain below.

Q23. IS GRANTING ETI A CCN AMENDMENT FOR THE DEPLOYMENT OF POWER THROUGH GENERATORS APPROPRIATE WHEN CONSIDERING THE ADEQUACY OF EXISTING SERVICE AND THE NEED FOR ADDITIONAL SERVICE?

A. Yes, as discussed in Q10, the reliability and resource planning benefits discussed herein and in Ms. Weaver's Direct Testimony are significant and will help ensure ETI continues to provide adequate, reliable service and addresses the evolving needs and expectations of its customers.

Q24. EVEN WITH THE MONTGOMERY COUNTY POWER STATION COMING ONLINE SOON AND THE PLANNED ACQUISITION OF THE HARDIN COUNTY PEAKING FACILITY, DOES ETI STILL HAVE A LONG-TERM CAPACITY NEED, INCLUDING FOR PEAKING AND RESERVE CAPACITY?

A. Yes. As Company witness Weaver discusses at length in her Direct Testimony, a long-term planning need remains even with the Montgomery County Power Station beginning operations and the acquisition of the Hardin County Peaking Facility in

2021. Approving deployment of up to 75 MW of DG will help address this long-term need.

Q25. WILL DEPLOYMENT OF POWER THROUGH GENERATORS HAVE ANY EFFECT ON ANY ELECTRIC UTILITY SERVING THE AREA PROXIMATE TO ETI'S SERVICE TERRITORY?

A. Yes. I believe deployment of the Power Through fleet will have a positive effect because it will reduce the load placed on the bulk transmission system that is also used by other load serving entities.

Q26. WILL DEPLOYMENT OF POWER THROUGH GENERATORS HAVE ANY ADVERSE EFFECT ON COMMUNITY VALUES, RECREATIONAL AND PARK AREAS, OR HISTORICAL AND AESTHETIC VALUES?

A. No. The Power Through generators, which are relatively small and quiet in comparison to central station generating units, will be located at existing commercial and industrial sites. In addition, the Power Through generators will have a smaller footprint than a host customer's alternative option for backup power supply, typically a diesel backup generator and fuel tank. Power Through generators also benefit from the consistent and convenient fuel supply of natural gas rather than needing to maintain and replenish onsite diesel fuel.

Q27. WILL DEPLOYMENT OF POWER THROUGH GENERATORS HAVE ANY ADVERSE EFFECT ON ENVIRONMENTAL INTEGRITY?

A. No. First, the Company plans to comply with all applicable emissions testing and air permitting requirements for the Power Through generators that may be required based on the location of the generators. Second, the natural gas-fired Power Through generators are cleaner operating than other fossil fuels used for similar applications, particularly diesel. Third, the overall environmental impact will be improved by the quick and incremental response profile of the Power Through generators relative to other generation assets that have minimum load requirements and minimum run times. Fourth, as the quantity of these types of versatile assets increases on the system, they can serve to improve the ability for the system to integrate intermittent renewable resources by sustaining the consistent power demands of ETI customers.

Q28. IS GRANTING ETI A CCN AMENDMENT FOR THE DEPLOYMENT OF POWER THROUGH GENERATORS APPROPRIATE WHEN CONSIDERING THE PROBABLE IMPROVEMENT OF SERVICE?

A. Yes, for the reasons I stated in response to Question 10 and 13 above and as discussed in detail by Ms. Weaver.

Q29. WHY IS THE COMPANY ALSO SEEKING A GOOD CAUSE EXCEPTION TO THE COMMISSION'S FUEL RULE?

A. As discussed by Mr. Knighten, recognizing that both the host customer and ETI's overall customer base contribute to the recovery of the capital and O&M costs of a

Power Through generator, ETI proposes that any energy margins earned by a Power Through generator be allocated between the host customer and all customers. The proposed allocation of 36% of actual energy margins earned by a Power Through generator would be reflected as a credit on the host customer's electric bill, and the remaining portion of energy margins attributable to all customers would serve to reduce ETI's monthly fuel expense.

I understand that the PUCT's fuel rule 16 TAC § 25.236(a)(8)(B) requires revenues from wholesale energy sales to be used to offset ETI's fuel expense, with 16 § TAC 25.236(a)(9) providing an exception to allow an electric utility to retain 10% of the margins from a wholesale energy sale transaction if certain criteria are met with the remaining 90% offsetting fuel expense. ETI is seeking a good cause exception to those rules to allow host customers to retain a share of margins earned by Power Through generators in the MISO energy market and in an amount that exceeds 10%. The margins would be determined by comparison of the generation offer for a Power Through generator to revenues received when that offer is selected by MISO. Good cause exists because host customers will pay a rate for backup electric service based on an allocation of the cost of a resource being used to serve all customers and produce energy margins, and the share of margins ETI proposes be retained by host customers is commensurate with the allocated portion of non-fuel costs borne by host customers.

Q30. SHOULD THE COMMISSION GRANT THE APPROVALS REQUESTED IN THE APPLICATION?

A. Yes. For the reasons stated herein and in the other witnesses' direct testimonies, I believe the Commission should amend ETI's CCN to allow for deployment of up to 75 MW of Power Through generators and approve Rate Schedule UODG and the associated Customer Agreement.

V. WITNESS OVERVIEW

Q31. PLEASE DISCUSS THE ROLES OF THE OTHER WITNESSES PROVIDING DIRECT TESTIMONY IN SUPPORT OF THIS APPLICATION.

A. The following is a brief summary of the Company witnesses:

- Company witness Abigail B. Weaver, ETI Director of Resource Planning & Market Operations, presents ETI's long-term capacity needs and explains the capacity, energy, reliability, and resiliency benefits that Power Through generators will provide to customers, including the host customer. In addition, Ms. Weaver quantifies certain components of the value ETI's customers can expect from the Power Through fleet. Further, Ms. Weaver explains certain technical characteristics of the resources and provides the estimated capital, and non-fuel operations and maintenance expenses associated with owning and operating 75 MW of Power Through generators.
- Company witness Allison P. Lofton, Manager of Regulatory Filings, describes the recovery of and accounting for the costs of Power Through generators,

including the associated estimated revenue requirement and customer bill impacts.

- Company witness Jeffrey R. Knighten, ETI Director of Regulatory Affairs, supports the Company's proposed Rate Schedule UODG and associated Customer Agreement that is designed to charge host customers for the backup electric service provided by a Power Through generator.

VI. SUMMARY AND CONCLUSION

Q32. PLEASE SUMMARIZE YOUR DIRECT TESTIMONY.

A. ETI requests that the Commission approve its Application and find that the ownership and operation of up to 75 MW of natural gas-fired DG to be installed at commercial and industrial customer premises will serve the public convenience and necessity, as well as approve the corresponding Rate Schedule UODG and Customer Agreement. The deployment of needed capacity supplied through Power Through generators will result in customer benefits for both host customers as well as ETI's broader customer base. Moreover, the Power Through fleet is well-suited to meet customers' changing expectations as technology and the energy grid evolve. Especially in ETI's storm-prone service territory, Power Through generators stand to provide significant benefits by increasing grid resiliency and enabling host customers to continue operating and providing needed products and services to communities.

The testimonies and exhibits included with this filing demonstrate ETI's current supply needs as well as how deployment of Power Through generators meets the factors required to serve the public convenience and necessity.

Q33. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

November 2nd, 2020

Kroger Co.
19245 David Memorial Drive
Shenandoah, Texas 77385

To Stacy Seller,

I am writing to express interest in participating backup electric service supplied by ETI's Power Through generators.

I believe the program can better support Kroger's business in avoiding food waste and business disruption, and more importantly, better serving communities, so that customers can have access to vital supplies such as food and medication during any disasters.

Kroger lost more than $200,000 in perishable items and spent more than $20,000 to find backup generator to support during the power outage events due to Hurricanes. The lost could be significantly avoided if there was an on-site generator.

I believe the ETI's Power Though program can benefit Kroger, communities, and Entergy. Kroger as a host can have a generator onsite without high upfront cost. The generator will help Kroger to avoid any lost during a power outage event and help to supply power to critical facilities as needed. Community would have access to food and medication during a disaster. The generator also consumes cleaner natural gas compared to a diesel generator.

With all the benefits to all parties as mentioned above, I am asking PUCT to approve ETI's application to make this program available to us.

Sincerely,
Minghan Chua, P.E, CEM
Energy Engineer
Kroger Co.

LONE STAR COLLEGE

November 4, 2020

Tracey Brodeur
Entergy Texas, Inc.
10055 Grogans Mill Rd.
The Woodlands, TX 77380

Dear Ms. Brodeur,

Lone Star College expresses our strong interest in your new ETI Power Through back up generation Program. Our discussions with your team members indicate a great synergy with Entergy for the Program at various Lone Star College locations where we have critical Data Center and Life Safety requirements.

The potential opportunity for LSC is two-fold. Lone Star has a large data center at our College's System Office in The Woodlands. This data center hosts all Lone Star Operational, Business, HR and Financial software to run the College. An outage at this data center would impact Lone Star from meeting its Mission to provide 'comprehensive educational opportunities and programs to enrich lives' for our 90,000+ students and hamper our Business Management activities. A recent outage and failure of an old, diesel backup generator caused widespread Business and Educational interruption and cost LSC tens of thousands of dollars in damages.

The second opportunity within Lone Star College deals with Life Safety issues at our various Educational Campuses and Centers. Most LSC buildings have backup generation for Life Safety protection in case of power outages so that we can safely evacuate our Students and Faculty in an emergency. Many of these backup generators where installed years ago and approaching their end of life. Working with Entergy on this exciting new Program, Lone Star would be able to reduce the cost burden on Local taxpayers, while then reallocating the LSC funds for Educational programs.

Lone Star College supports Entergy Texas, Inc. filing with the Texas PUC for this new Program. We strongly feel it would be a great benefit to not only Lone Star College, but to all Entergy's customers. LSC looks forward to the Texas PUC reviewing and approving this critical program for Entergy's customers. Feel free to contact me if you have any questions or need further information from Lone Star College.

Respectfully,

Stephen C. Head

The Woodlands
5000 Research Forest Drive
The Woodlands, TX 77381-4356
832.813.6728

University Park
20515 S.H. 249
Houston, TX 77070-2607
LoneStar.edu

SMALL TOWN CHARM. WORLD CLASS CULTURE.
ORANGE
TEXAS

November 19, 2020

Mr. Jim Malain
Entergy Texas, Inc.
409 Strickland Dr.
Orange, Texas 77630

Dear Mr. Malain,

I am writing to express my interest in the proposed Entergy Texas Power Through back up power program for the City of Orange, Texas.

A power outage for the City of Orange could potentially mean a public health emergency as in a situation that would result in the loss of use of our wastewater treatment system. Furthermore, a power outage to other City facilities would inhibit the City's ability to recover from weather related events such as hurricanes, flooding, and ice storms.

With Power Through, the City would be able to obtain a more affordable back up power solution which would enable us to stay open during a power outage. The challenges of purchasing and maintaining a standby generator is costly for the taxpayers and time consuming for our staff. We are excited for the potential opportunity to have Entergy Texas partner with us to reduce those challenges to obtaining back up power.

I am pleased that Entergy Texas is pursuing this new program to reduce the impact of power outages to the City of Orange thereby better serving our residents and businesses during a power outage.

Please accept this letter in support of the proposed Power Through program and I look forward to hearing more about this program in the near future.

Sincerely,

Michael Kunst
City Manager

NELDA C. AND H.J. LUTCHER STARK FOUNDATION

November 19, 2020

Mr. Jim Malain
Entergy Texas, Inc.
409 Strickland Dr.
Orange, Texas 77630

Dear Mr. Malain,

We at the Stark Foundation are very supportive of Entergy Texas, Inc.'s backup generator program being considered by the Public Utility Commission. We support the approval of your application to make this program available to the community.
Power outages result in numerous problems and expenses for us. When an outage occurs, ETI's Power Through backup program will allow us to continue to serve the public, protect our facilities and protect our employees' jobs.
During the last hurricane event we brought in rental generators. Our expenses associated with this were $45,000 covering the equipment costs and fuel alone. Prior to the rentals being put in place we were without power for two days. This meant that our security and fire alarm systems were not functional; an obviously unsafe situation.
Again, we encourage the support of the PUCT's approval of the Entergy Texas, Inc. application for this program.

Sincerely,

Gus Harris
Chief Properties Officer

Dayton Independent School District
P.O. Box 248
Dayton, Texas 77535
936-258-2667 Fax 936-258-5616

November 20, 2020

Dear Chairman Walker and Committee,

I appreciate your time and consideration as I am writing to give my district's support of Power Through that along with ETI's Power Through PUCT Docket. I am the Superintendent of Dayton ISD and after emails and a conference call with Ms. Pamela Williams, I know that Dayton ISD is very interested in the back up electric service supplied by a Power Through generator.

Currently, we do not have back-up generators in most of our campuses and/or facilities. When we have disruptions in power, at those campuses, it is 'all hands on deck'. We begin moving food from those campuses' refrigerators and freezers. We currently have almost 5,500 students and over 820 staff members. Therefore, there is a lot of moving of food in order not to lose it. We feed all of our students with a free breakfast and lunch daily. As a superintendent, I do not like canceling school because over 70% of our children come from economically disadvantaged homes. In many instances, if we do not feed our children, then they do not eat. One particular example was during one of our recent hurricanes, we lost power and we lost over $50,000 in food alone. Having a back-up system in place would greatly help us financially.

Another reason we hope you will approve this project is that many of our classrooms do not have window or outside lighting. This leaves many of our students and staff in the dark. With COVID, not having air conditioning and/or air circulation goes against all of the CDC guidelines. Another health consideration is the lack of use of bathroom facilities in our schools once power is lost. The back-up system would allow us to continue educating our children in a safe, secure, and healthy environment.

We also have medically fragile students who come to us with medications that must be refrigerated. Having a generator back-up system will allow us to continue to service those students without any interruptions.

Finally, one more consideration on attaining a generator back-up system would be for education. I would love our students to learn more about various ways Dayton ISD is helping with a cleaner, natural gas-fired generation. I can see how some of our classes would be very interested in this process.

Thank you for your serious consideration and approval of this program. I know this would be very beneficial to not only to my district but to our entire community. Thank you again for your time.

With Bronco Pride,

Dr. Jessica Johnson
Dayton ISD Superintendent

November 30, 2020

Mr. Sam Bethea
Entergy Texas, Inc.
210 West Avenue H
Silsbee, Texas 77656

Dear Mr. Bethea,

Pursuant to our discussion, I am writing to express my interest in the proposed Entergy Texas Power Through backup power program for Hardin County, Texas.

A power outage for the Courthouse and/or Jail means that we are unable to provide emergency services to the public, incapable of offering services to the public, and would also cause the Sheriff to relocate some 150+ inmates to other facilities throughout the state. Additionally, it means a large amount of spoiled goods in the jail. With Power Through, we would be able to obtain a more affordable backup power solution which would enable us to remain open to the public and continue to provide emergency services during a power outage. The challenges of purchasing and maintaining a standby generator can be costly and time consuming for our operations. We are excited for the potential opportunity to have Entergy Texas partner with us to reduce those challenges to obtaining backup power.

I am pleased that Entergy Texas is pursuing this new program to reduce the impact of power outages to our County government offices so that we can better serve our citizens and communities during a power outage.

Please accept this letter in support of the proposed Power Through program. I look forward to hearing more about this program in the near future.

Very respectfully,

Wayne McDaniel

Office of the President

December 1, 2020

Mr. Jim Malain
Entergy Texas, Inc.
409 Strickland Dr.
Orange, Texas 77630

Dear Mr. Malain,

After previous discussions with you, I am writing to express my interest in the proposed Entergy Texas Power Through back up power program for Lamar State College Orange).

A power outage for my organization means an inability to serve our students. With Power Through, we would be able to obtain a more affordable back up power solution which would enable us to stay open during a power outage. The challenges of purchasing and maintaining a standby generator can be costly and time consuming for our business. We are excited for the potential opportunity to have Entergy Texas partner with us to reduce those challenges to obtaining back up power.

I am pleased that Entergy Texas is pursuing this new program to reduce the impact of power outages to Lamar State College Orange so that we can better serve our customers and communities during a power outage.

Please accept this letter in support of the proposed Power Through program and I look forward to hearing more about this program in the near future.

Respectfully,

Thomas A. Johnson, Ed.D.
President

TAJ/sdj

Orangefield Independent School District

P O Box 228 • Orangefield, Texas 77639

December 1, 2020

Mr Jim Malain
Entergy Texas, Inc.
409 Strickland Dr.
Orange, Texas 77630

Dear Mr. Malain,

After previous discussions with you, I am writing to express my interest in the proposed Entergy Texas Power Through back up power program for Orangefield Independent School District

A power outage for my organization/business means a risk of damage, spoiled goods, and a prolonged school shutdown. With Power Through, we would be able to obtain a more affordable back up power solution which would enable us to stay open during a power outage. The challenges of purchasing and maintaining a standby generator can be costly and time consuming for our business. We are excited for the potential opportunity to have Entergy Texas partner with us to reduce those challenges to obtaining back up power.

I am pleased that Entergy Texas is pursuing this new program to reduce the impact of power outages to our school district so that we can better serve our customers and communities during a power outage.

Please accept this letter in support of the proposed Power Through program and I look forward to hearing more about this program in the near future

Respectfully,

(409) 735-5337
Shaun McAlpin Superintendent
smcalpin@orangefieldisd.net
Fax (409) 735-2080

ORANGE COUNTY NAVIGATION & PORT DISTRICT
1201 Childers Road • P. O. Box 2410 • Orange, Texas 77631-2410, USA
Phone: (409) 883-4363 • Fax: (409) 883-5607
www.portoforange.com
Lorrie Taylor, Executive Port Director/CEO

December 1, 2020

Mr. Jim Malain
Entergy Texas, Inc.
409 Strickland Dr.
Orange, Texas 77630

Dear Mr. Malain,

After previous discussions with you, I am writing to express my strong interest in the proposed Entergy Texas Power Through back up power program for the Orange County Navigation & Port District dba Port of Orange.

The Port of Orange is a fully regulated TWIC facility maintaining a staff of two security guards on duty 24-7. A power outage for the Port of Orange is a critical need to our security, staff, tenants, contractors and all crew docked at the Port of Orange docks. A power outage results in both safety and security concerns to hundreds of people at our facilities. With Power Through, we would be able to obtain more affordable back up power solutions which would enable us to remain open 24-7 during a power outage. The challenges of purchasing and maintaining a standby generator can be costly and time consuming for our business. We are excited for the potential opportunity to have Entergy Texas partner with us to reduce those challenges to obtaining back up power.

I am pleased that Entergy Texas is pursuing this new program to reduce the impact of power outages to our port so that we can better serve our customers and tenants during a power outage.

Please accept this letter in support of the proposed Power Through program and I look forward to hearing more about this program as soon as possible.

Respectfully,

Lorrie M. Taylor

Lorrie M. Taylor, CPA
Executive Port Director/CEO
Orange County Navigation & Port District
dba Port of Orange
P.O. Box 2410 – 1201 Childers Road
Orange, Texas 77631-2410
Ltaylor@portoforange.com
Phone: (409) 883-4363

Mr. Stuart Barrett
c/o Christina Peralta
Entergy Texas, Inc
T-PKWD-2C
10055 Grogans Mill Dr.
The Woodlands, TX 77380

Dear Mr. Barrett,

Thank you for introducing VGXI to the Power Through backup generation concept we discussed last week.

As we discussed, we are currently expanding our operations in Conroe, TX and are exploring backup generation options. VGXI is a full service Contract Development and Manufacturing Organization that produces DNA plasmids for human clinical trials, virus production, toxicology studies and pre-clinical research. A loss of power lasting more than 10 minutes results in the loss of an entire batch of vaccines or medicines culminating in extreme economic and product loss.

We are excited about the possibilities that the Power Through Program offers as it not only allows us to back up the entire facility, but it also takes the burden of maintenance and operations activities away from us and allows us to focus on our core strengths of producing much needed vaccines and therapeutics.

Please accept this as my Letter of Interest to further pursue participation in the Power Through Program. I understand that this letter doesn't obligate either VGXI or Entergy in the participation in the Program.

I am available to discuss our needs and interest in the Program with anyone from Entergy or The Public Utilities Commission of Texas (PUCT).

Regards,

Jeffrey E Darnell
Director of Facilities

2700 RESEARCH FOREST DRIVE, SUITE 180 – THE WOODLANDS, TX 77381
PHONE (281) 296-7300 – FAX (281) 296-7333

This workpaper has been provided electronically on the Public Utility Commission interchange and to the parties.

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DOCKET NO. 51575

APPLICATION OF ENTERGY TEXAS, INC. TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY TO DEPLOY NATURAL GAS-FIRED DISTRIBUTED GENERATION AND STATEMENT OF INTENT FOR RATE SCHEDULE UODG	§ § § § § § §	**PUBLIC UTILITY COMMISSION** **OF TEXAS**

DIRECT TESTIMONY

OF

ABIGAIL B. WEAVER

ON BEHALF OF

ENTERGY TEXAS, INC.

REDACTED

DECEMBER 2020

ENTERGY TEXAS, INC.
DIRECT TESTIMONY OF ABIGAIL B. WEAVER
DOCKET NO. 51575

TABLE OF CONTENTS

EXHIBITS

I. INTRODUCTION AND PURPOSE

Q1. PLEASE STATE YOUR NAME AND CURRENT BUSINESS ADDRESS.

A. My name is Abigail B. Weaver. My business address is 10055 Grogans Mill Road, The Woodlands, Texas 77380.

Q2. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Entergy Texas, Inc. ("ETI" or "Company") as the Director, Resource Planning and Market Operations.

Q3. PLEASE DESCRIBE YOUR CURRENT JOB RESPONSIBILITIES.

A. I am responsible for the management and administration of ETI's resource planning activities. My duties include directing ETI's resource planning activities (including generation and transmission) and implementing the Company's supply plan for meeting the load and energy requirements of ETI's retail customers. In my position, I also serve as the Chairwoman of ETI's Operating Committee ("ETI OC"), a committee that reviews and provides advisory input and recommendations on various planning and operational issues for ETI to the ETI President and CEO.

Q4. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I hold a Bachelor of Science degree in accounting from the University of New Orleans and a Masters of Business Administration ("MBA") from Sam Houston

State University. I started my career with ESI in 2003 as an intern in the Revenue Accounting department where I was responsible for reconciling revenue subsidiary ledgers to the general ledger, as well as analyzing revenue and usage trends for reporting purposes. In 2004, I was hired as an accountant in the Utility Operations Accounting group where I was responsible for calculating and recording various fuel, purchased power, and wholesale revenue transactions for the Entergy Operating Companies ("EOCs"). In 2007, I joined the System Planning & Operations ("SPO") organization as an analyst in the Supply Planning & Analysis group. In this group, I was responsible for providing financial modeling and economic analysis relating to the EOCs' projected production costs, Requests for Proposals and other resource opportunities. In 2010, I became a project manager in the Energy Analytics & Business Support group of SPO. In that role, I led a group of analysts that were responsible for the Intra-System Billings under the Entergy System Agreement, as well as the wholesale power billing processes. In 2013, I took the position of Manager of the RTO Settlements & Analysis group to support the EOCs' transition to the Midcontinent Independent System Operator, Inc. ("MISO") regional transmission organization. In that role, I was responsible for developing and implementing processes to verify the accuracy of the MISO billings to the EOCs, as well as developing reports to provide analytical support using MISO billing data.

In 2014, I was promoted to Director, ETI Finance. In this role, I was responsible for the development of ETI's financial plan, as well as ensuring that ETI's books and financial disclosures were accurate, complete, and fairly represented

the business of ETI. I also provided financial analysis and support for ETI's business plans and strategic initiatives. In 2018, I took the position of Director of Back Office and Support Services in SPO. In that role, I was responsible for managing multiple groups that handled the reporting and settlements for all fuel and MISO market transactions, the development of the sales and load forecasts for the EOCs, and the training and compliance activities for SPO. In 2019, I took my current role as Director of Resource Planning & Market Operations for ETI.

Q5. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY BEFORE A REGULATORY COMMISSION?

A. Yes, I provided direct and rebuttal testimony in Docket No. 43958, *Application of Entergy Texas, Inc. to Amend Its Certificate of Convenience and Necessity and for Public Interest Determination for Purchase of Unit 1, Union Power Station in Union County, Arkansas*, Docket No. 44704, *Application of Entergy Texas, Inc. for Authority to Change Rates*, Docket No. 46416, *Application of Entergy Texas, Inc. to Amend Its Certificate of Convenience and Necessity and for Public Interest Determination for Montgomery County Power Station in Montgomery County, Texas,* Docket No. 48371, *Entergy Texas, Inc.'s Statement of Intent and Application for Authority to Change Rates*, Docket No. 51381, *Application of Entergy Texas, Inc. to Establish a Generation Cost Recovery Rider Related to the Montgomery County Power Station,* and Docket No. 51557, *Application of Entergy Texas, Inc. to Establish a Generation Cost Recovery Rider Related to the Hardin County Peaking Facility.*

Q6. ON WHOSE BEHALF ARE YOU FILING THIS DIRECT TESTIMONY?

A. I am filing this Direct Testimony on behalf of ETI.

Q7. DO YOU SPONSOR ANY EXHIBITS OR WORKPAPERS IN YOUR TESTIMONY?

A. I sponsor the exhibits listed after the Table of Contents at the beginning of my testimony. I also co-sponsor Workpaper WP/JRK-1/2 with regard to estimated MISO capacity value and total capital costs. The supporting materials and data cited in tables, charts and footnotes in my testimony are also included in my workpapers.

Q8. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. My testimony explains how ETI plans to address a portion of its long-term resource requirements and enhance the resiliency of its electric system with the installation of a fleet of natural gas-fired distributed generation ("DG"). These DG resources will act as "microgrids"[1] installed throughout ETI's distribution system that serve the dual functions of 1) meeting a portion of the capacity and energy needs of ETI's broader customer base and 2) the backup power needs of host commercial and industrial customers during an outage. Because these microgrids will be used to provide power to host customers during a grid outage, ETI is calling this fleet of DG the Power

[1] *See, e.g., microgridknowledge.com/microgrid-investment-gtm/* ("GTM's new definition encompasses what is described as "basic microgrids," which have only one distributed energy resource (DER) and may serve a single building."); *The Evolution of Distributed Energy Resources What the Rise of Local Energy Means for Businesses, Institutions, and Communities* at 4 (2018) ("Nanogrids operate in similar fashion [to a microgrid], but generally serve a smaller footprint, typically one building.") available at https://microgridknowledge.com/white-paper/evolution-distributed-energy-resources/.

Through fleet. I discuss how ETI plans to use the Power Through fleet to serve the larger grid and support host customer operations during an outage event, yielding the following benefits for ETI's customers:

- economic, incremental peaking and reserve capacity that will satisfy a portion of ETI's reliability requirements and mitigate exposure to peaking energy prices;
- a more resilient grid to facilitate restoration efforts following severe weather events or other major outages;
- a diverse mix of highly flexible and reliable resources that can be used to support integration of intermittent resources (*e.g.,* solar photovoltaic) and rapidly respond to changing market conditions;
- capability to reduce distribution infrastructure costs and manage transmission constraints; and
- a reliable, cost-effective supply of back up electric service for host customers, which will allow them to continue providing valuable products and services to customers at large during an outage event.

Q9. PLEASE FURTHER EXPLAIN WHY THE COMPANY PROPOSES TO DEPLOY THE POWER THROUGH FLEET AND HOW THESE RESOURCES BRING VALUE TO ETI CUSTOMERS.

A. Deployment of the Power Through fleet will create value for ETI's customers by using a single resource to address two distinct and important needs that would otherwise be served by multiple resources. ETI has a need for long-term resources, including peaking and reserve supply role resources, in order to serve all its customers reliably and economically while mitigating exposure to market and reliability risks. At the same time, many customers are seeking new and innovative

ways to meet their individual power needs, which increasingly include using technology to provide enhanced reliability and resiliency of electric service. As discussed below, deployment of Power Through generators provides an economic solution that leverages the otherwise idle time of a single resource to serve both needs and enhance the resiliency of ETI's electric grid.

Q10. PLEASE ELABORATE ON THE TWO RESOURCE NEEDS ADDRESSED BY THE PROPOSED DEPLOYMENT OF A FLEET OF POWER THROUGH GENERATORS.

A. Businesses today, such as gas stations, grocery stores, first responders, and medical facilities, desire highly-reliable, high quality power, and to mitigate the costly effects of outages, particularly longer-duration outages caused by severe weather events. These customers often consider installing backup generators to meet their needs during grid outages. However, the process to research, identify, contract, procure, operate, and maintain backup generation is time-consuming, and it often presents barriers to doing so, such as the up-front purchase price and ongoing ownership responsibilities of an asset that is infrequently deployed in that backup role. As owner of the asset, the customer is also then responsible for arrangements for monitoring, fueling, maintenance, and repair of the asset.

Utilities, on the other hand, have a need and obligation to serve all of their customers reliably and economically, including a need for resources that serve different supply roles, such as the peaking and reserve role. ETI's ability to dispatch

and fully control the Power Through fleet connected to its distribution system will provide benefits for all its customers by offering those units in the energy market and utilizing their capacity to satisfy resource adequacy requirements. That is, ETI's ownership, control and dispatch of DG will allow the Company to mitigate exposure to the MISO markets for the benefit of all its customers.

When DG is owned by the customer for their own backup power supply during a grid outage, the utility has little ability to leverage the resource at other times for the benefit of its system. Also, the customer-owner may not be able to offset its investment or mitigate the challenges of ownership by making that often idle resource available to serve the needs of other customers. Company-owned DG made available to supply back-up power solves these issues and provides value to both ETI's broader customer base and the host customer by leveraging the availability of these peaking and reserve resources in an economic manner.

In sum, the Company is proposing to deploy the Power Through fleet to: (a) expand the breadth of available ETI resources for use in meeting incremental capacity and energy needs while diversifying the grid's operational flexibility, and (b) meet a critical and demonstrated customer need for enhanced reliability and resiliency.

Q11. WHAT IS THE DIFFERENCE BETWEEN RELIABILITY AND RESILIENCY?

A. I generally refer to the term "reliability" to describe the availability of power (typically measured in frequency and duration of interruptions) and "resiliency" to

mean preparation for and adaption to changing conditions and the ability to withstand and recover rapidly from disruptive events. For example, as stated by the National Academy of Science, "Resilience is not the same as reliability. While minimizing the likelihood of large-area, long-duration outages is important, a resilient system is one that acknowledges that such outages can occur, prepares to deal with them, minimizes their impact when they occur, is able to restore service quickly, and draws lessons from the experience to improve performance in the future."[2] In other words, reliability can be described as a measure of the ability to avoid an outage whereas resiliency is the ability to recover from or mitigate the effects of one.

An important feature of the Power Through fleet's contribution to grid resiliency, in comparison to many other types of distributed resources, is that the Power Through generators will be able to provide power requirements continuously for an extended, if not indefinite, period.[3]

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[2] The National Academy of Sciences, *Enhancing the Resilience of the Nation's Electricity System* at 10 (2017), available at https://www.nap.edu/catalog/24836/enhancing-the-resilience-of-the-nations-electricity-system.

[3] By comparison, solar photovoltaic ("PV") resources, for example, cannot provide power during all hours of the day, and battery backups have limited duration and typically can meet only a portion of a larger customer's load. Another limitation of solar PV and battery storage is the amount of building space required for the panels and batteries of sufficient capacity to provide anything more than short-term backup supply.

II. USE OF THE POWER THROUGH FLEET TO SATISFY A PORTION OF ETI'S RESOURCE NEED

Q12. DOES ETI CURRENTLY HAVE SUFFICIENT CAPACITY TO PROVIDE ADEQUATE SERVICE TO ITS EXISTING CUSTOMERS?

A. Yes. ETI has sufficient resources to adequately meet its customers' needs under current conditions. However, as discussed below and consistent with its long-term planning process, ETI needs additional long-term generating capacity (particularly peaking and reserve resources) to meet customer resource needs and to satisfy resource adequacy requirements imposed on ETI by MISO, a portion of that need which ETI proposes to meet with the deployment of the Power Through fleet.

Q13. PLEASE DESCRIBE THE COMPANY'S CURRENT RESOURCE PORTFOLIO.

A. The Company controls approximately 4,200 MW of generating capacity either through ownership or long-term purchase power agreements ("PPAs"). Exhibit ABW-1 provides an overview of the Company's generation portfolio. Table 1 below shows those resources by fuel type measured in installed MW. It is important to note that some of the amounts below represent resources that are not owned by the Company but instead are under contract through PPAs.

Table 1

2021 ETI Resource Portfolio			
	Installed Capacity MW	**Unforced Capacity ("UCAP") MW[4]**	**UCAP %**
Coal	258.8	222.3	5.8%
Nuclear	287.7	276.3	7.2%
CCGT[5]	1,277.2	1,214.3	31.7%
CT	194.5	189.4	4.9%
Other Gas-Steam	2,034.7	1,740.7	45.5%
Other	195.4	186.7	4.9%
Total	**4,248.4**	**3,829.6**	**100.0%**

As reflected in Table 1 and Exhibit ABW-1, a substantial portion of the capacity in the Company's current resource portfolio is from older gas-steam generation units that have been in-service for over 40 years with the oldest being in operation for 57 years. While the Company has made and will continue to make investments to maintain these generators when economic to do so, many of these generators are expected to reach the end of their economic useful lives and deactivate during the next fifteen years. Table 2 reflects recent and currently assumed deactivation dates over the next fifteen years for owned generation and affiliate life-of-unit PPAs.

[4] Megawatt ratings based on the capacity ratings used for MISO Planning Year 2020 – 2021 (June 1, 2020 – May 31, 2021). Beginning with the Business Plan 2021 planning process, ETI has transitioned from using Installed Capacity to Unforced Capacity unit ratings in its resource planning.

[5] Combined-cycle gas turbine ("CCGT").

Highly Sensitive Table 2

Current Deactivation Assumptions		
Resource	**UCAP MW**	**Deactivation Date**
Sabine	1,254	[redacted]
Perryville	179	
Lewis Creek	485	

In addition, expiring third-party PPAs contribute to the Company's need for economic long-term capacity. Table 3 reflects upcoming PPA expirations.

Highly Sensitive Table 3

Table 3: PPA Expirations		
PPA	**UCAP MW**	**Contract Expiration Date**
ETEC San Jacinto	[redacted]	
Carville		
SRMPA		

Finally, while these resources are expected to be removed from ETI's resource portfolio, ETI's coincident peak load[6] is projected to grow 1.5% (or 52 MW) by 2022, 3.3% (or 111 MW) by 2023, and 12.6% (or 427 MW) by 2030.

Q14. WHAT ARE THE COMPANY'S OBJECTIVES IN DEVELOPING ITS RESOURCE PORTFOLIO?

A. ETI's primary objectives in its resource planning process are:

- ***To serve customers' power needs reliably***, helping to meet the energy needs of the homes, businesses, and communities ETI serves now and in the future.

[6] Beginning with the Business Plan 2021 planning process, ETI has transitioned from using ETI's non-coincident peak load to using the coincident to MISO peak forecast for resource planning purposes.

- ***To reliably provide power at the lowest reasonable supply cost***, by pursuing a diverse mix of energy resources, new generation techniques, and customer-centric technological innovations.

- ***To mitigate exposure to risks that may affect customer cost or reliability***, keeping energy as affordably priced and reliable for ETI customers as possible.

Further, ETI's long-term planning process is guided by the following principles to support the planning objectives I identified earlier:

- ***Capacity*** – Provide adequate capacity to meet customer needs.

- ***Base Load Production Cost*** – Meet base load requirements to keep costs stable.

- ***Load Following Production Cost*** – Respond to the varying needs of customers based on a number of factors.

- ***Modern Portfolio*** – Leverage ETI's modern, efficient resources while evaluating economics and reliability associated with less efficient legacy units.

- ***Price Stability*** – Mitigate exposure to price volatility.

- ***Supply Diversity*** – Diversify technology, location, capital commitments, and supply channels.

- ***In-Region Resources*** – Leverage a variety of in-region resources to meet customers' needs reliably and affordably.

Q15. DOES THE COMPANY NEED ADDITIONAL LONG-TERM GENERATING CAPACITY TO SATISFY THOSE PLANNING PRINCIPLES AND OBJECTIVES?

A. Yes. The combined effect of load growth and reduction of available resources creates a need for incremental capacity. To illustrate the magnitude of the Company's need, I have compared the Company's projected load with its portfolio of resources.

Exhibit ABW-2 is a Projected Capacity Position analysis that compares the Company's overall planning requirements (based on coincident peak load plus planning reserve margin) with the generating resources and long-term contracted resources ETI expects to have in its portfolio and without the additions requested in this application.

Q16. WHAT DOES THE PROJECTED CAPACITY POSITION ANALYSIS INDICATE?

A. Projected load plus planning reserve margin needs exceed the Company's existing supply resources, which indicates a need for additional long-term capacity. Specifically, the Company will need approximately 133 MW of capacity by 2022, approximately 322 MW of capacity by 2023, and approximately 1.4 GW of capacity by 2030. Moreover, as explained below, while the Company's net capacity position is a deficit of 133 MW by 2022, the Company will be short 854 MW of peaking and reserve capacity, which shortfall is expected to increase to 1,013 MW by 2030.

Q17. HOW DO MISO RESOURCE ADEQUACY REQUIREMENTS INFLUENCE THE COMPANY'S RESOURCE NEEDS?

A. MISO has no responsibility to build or provide capacity, but MISO nevertheless assigns annual resource adequacy requirements to load-serving entities, including ETI. In doing so, MISO determines how much capacity must be located within each Local Resource Zone ("LRZ") relative to how much capacity can be "imported" from

other LRZs. In the event a load-serving entity's resources fall short of those annual requirements, either in total or in-zone, that load-serving entity is exposed to the zonal clearing price for MISO's annual capacity auction for that shortfall, which clearing price can approach and ultimately reach the "cost of new entry" as market conditions tighten.[7]

In LRZ 9, the LRZ where ETI is located, the in-zone requirements have increased significantly year over year due to changes in peak load and reserve margin requirements, available in-zone capacity, and import/export transmission limits.[8] And, proposed changes in the derivation of MISO's annual resource adequacy requirements are expected to further increase the need for in-zone resources.[9] Accordingly, through its long-term resource planning, ETI aims to mitigate the level of exposure to an annual capacity shortfall and places an emphasis on securing adequate in-zone resources.

Q18. PLEASE DISCUSS THE COMPANY'S NEED FOR DIFFERING TYPES OF CAPACITY.

A. In conducting long-term resource planning, the Company analyzes not only its overall capacity needs, but also its need for capacity that serves specific supply roles, such as: base load, core and seasonal load following, peaking, and reserve. Having the right

[7] The "cost of new entry" represents the regional, annualized capital cost of building a new combustion turbine, which was most-recently calculated by MISO to be $236.58/MW-day for LRZ 9.

[8] MISO's requirements for in-zone resources located within LRZ 9 have increased on average by 1,100 MW per year over the past three years.

[9] See my WP/Weaver Direct/Q17/1 and WP/Weaver Direct/Q17/2.

amount of capacity that is suitable to serve each of these supply roles allows the Company to most efficiently, cost-effectively, and reliably serve the time-varying level of customer load.

The Company defines its base load as the minimum level of load that is served 85% of the hours in a year. Core load-following requirements are those hours that exceed base load, but are less than the load levels experienced in the highest 30% of hours of the year. Then the seasonal load following requirement is defined as the levels of load that exceed base load and core load following but are less than load levels experienced in the highest 15% of the hours of the year. The Company's peaking requirement is defined as the level of load that is served in the highest 15% of the hours of the year. Finally, a reserve margin is necessary to maintain reliable service during unplanned circumstances.[10]

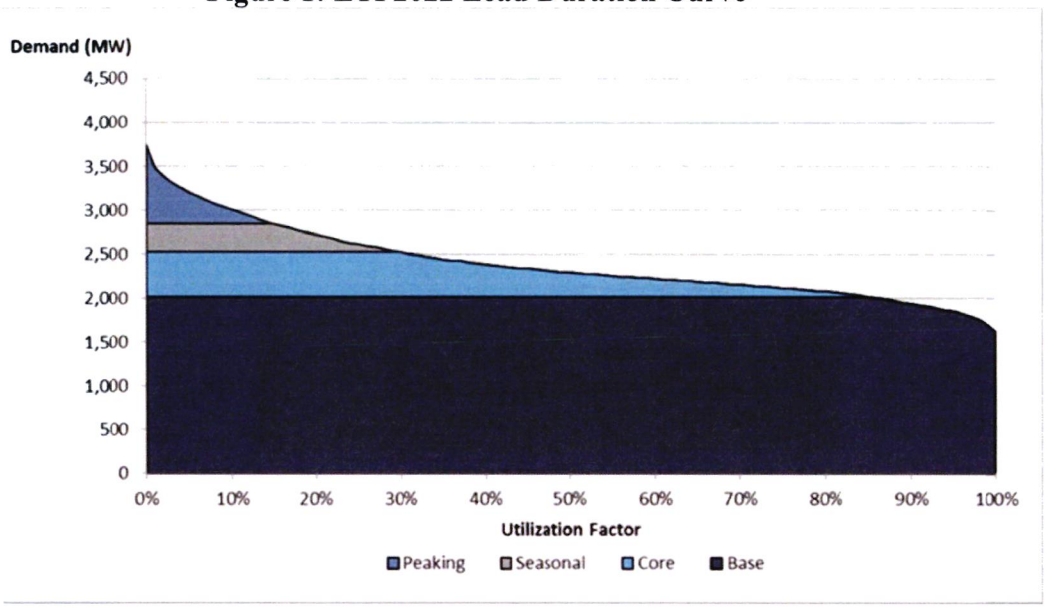
This is shown in Table 4 and Figure 1 below:

Table 4

	Max	Min
Base Load	100%	85%
Core Load Following	85%	30%
Seasonal Load Following	30%	15%
Peaking	15%	0%

[10] ETI bases its reserve margin for long-term planning on a loss of load expectation study using ETI's forecasted peak demand coincident with MISO peak demand.

Figure 1: ETI 2022 Load Duration Curve



Each supply resource has its own unique cost and performance characteristics that make it functionally and economically suited to serve certain supply roles. Base load resources typically cost more to construct per MW, but operate with relatively low variable cost and, because the resource is expected to operate in most hours at high utilization levels, the total supply cost is relatively low on a $/MWh basis. Conversely, a peaking or reserve unit is expected to operate at low utilization levels and higher variable costs but typically has a relatively low capital cost and, therefore, is the most economical alternative when utilized in a peaking or reserve role. Load following units have moderate capital cost and variable cost. ETI's long-term planning seeks to align supply role with customer demand in order to hold a diverse portfolio of resources that appropriately balance the fixed and variable costs borne by customers.

Table 5 shows ETI's projected capacity position (surplus or deficit) by supply role (excluding the 75 MW of Power Through DG requested in this proceeding).

Table 5

	2022			2023			2030		
(MW)	Need	Resources	Surplus/ (Deficit)	Need	Resources	Surplus/ (Deficit)	Need	Resources	Surplus/ (Deficit)
Base Load & Core Load Following	2,369	1,650	(719)	2,431	1,650	(781)	2,740	1,650	(1,090)
Seasonal Load Following	299	1,739	1,441	279	1,566	1,287	281	872	591
Peaking & Reserve	1,151	297	(854)	1,135	297	(838)	1,313	301	(1,013)
Total	3,819	3,686	(133)	3,845	3,513	(332)	4,334	2,822	(1,512)

In the MISO markets, portfolio balance requires having resources capable of supplying energy into the day-ahead and real-time markets at roughly the same volumes and same times as is expected to be purchased from those markets to serve customers. In this manner, the locational marginal prices ("LMP") paid to ETI's generation serve to offset the LMPs paid by the load. Such alignment of resource supply roles with the characteristics of customer load shape mitigates exposure to energy price risk. In my experience, MISO's selection and utilization of generation resources based on cost and reliability aligns with the utilization ranges that form the basis of the supply role designations used in ETI's long-term resource planning.

Q19. WHAT IS ETI'S CURRENT LONG-TERM SUPPLY PLAN TO ADDRESS ITS RESOURCE NEEDS?

A. ETI plans to add several new long-term resources in the foreseeable future to address its resource and supply-role needs and to diversify its resource portfolio. ETI will soon bring on line Montgomery County Power Station, a large, modern, and very efficient 2X1 CCGT and has recently made a selection in a request for proposals to bring an additional large 2X1 CCGT into service in the 2026 timeframe. These large resources are well-suited to serve as the cornerstone baseload and core load-following units in the Company's resource portfolio based on their capital cost and operational characteristics. In addition, ETI is proposing an ~100 MW solar resource in Docket No. 51215,[11] has entered into the Umbriel solar PPA (150 MW), and is seeking approval to purchase the Hardin County Peaking Facility (an incremental 72 MW). The proposal to deploy the Power Through fleet will add more capacity to satisfy ETI's reliability requirements and further diversify the Company's supply portfolio.

Q20. WHAT SUPPLY ROLE WILL THE POWER THROUGH FLEET ADDRESS?

A. The Power Through fleet is expected to operate in a peaking and reserve supply role based on its operating characteristics, as described below in Section IV. As shown above, ETI is currently short of peaking and reserve supply role resources and is expected to continue to be short in that supply role for the foreseeable future.

[11] Application of Entergy Texas, Inc. to Amend its Certificate of Convenience and Necessity for the Acquisition of a Solar Facility in Liberty County, Docket No. 51215 (pending).

Q21. HOW WILL DEPLOYMENT OF A FLEET OF POWER THROUGH GENERATORS SERVING IN A PEAKING AND RESERVE SUPPLY ROLE ALLOW ETI TO MEET ITS CUSTOMERS' POWER NEEDS RELIABLY AND ECONOMICALLY WHILE MITIGATING RISKS?

A. Load-serving entities such as ETI must plan to add new long-term resources to reliably serve customer load as that load grows and as existing resources either reach the end of their useful lives and are taken out of service or, in the case of purchase power agreements, expire. To do otherwise would eventually risk a shortage of capacity available to serve ETI's load, which is not a viable option. The Power Through fleet will be owned and controlled by ETI, and the associated incremental capacity will assure ETI is able to continue to provide reliable service to its customers.

Regarding economics, I explain below that the cost of Power Through generators that ETI proposes be borne by its broader customer base will be limited to the cost of a new-build combustion turbine ("CT"), which is currently a standard planning assumption for the lowest-cost known option for adding long-term capacity that will serve in a peaking and reserve supply role, as adjusted for avoided line losses. Thus, a fleet of Power Through generators represents a lowest reasonable cost supply option.

As to mitigation of risks, the Power Through generators will be operated as supply-side resources on the distribution system during periods of peak demand in order to reduce reliance on higher-cost MISO market supply-side resources using the

bulk transmission system. The additional, in-region capacity will also mitigate ETI's exposure to the potential risk of increasing MISO capacity auction clearing prices, as evidenced by the most recent capacity auction where ETI's LRZ cleared at a higher cost than neighboring regions.[12]

Q22. WHY USE A FLEET OF NATURAL GAS-FIRED DG TO SATISFY A PORTION OF ETI'S NEED FOR PEAKING AND RESERVE CAPACITY?

A. ETI actively works to stay abreast of its customers' evolving electricity needs. As the demand for energy grows, so too does the need to seek a diversified resource portfolio to meet the changing needs of its customers. Ever expanding and evolving supply alternatives and improved technologies provide new opportunities to diversify the Company's portfolio and provide economic power under a wide range of market conditions. Further, ETI aims to meet growing needs of customers by building new infrastructure to provide reliable and affordable electricity in ETI's footprint. A fleet of natural gas-fired DG serving as microgrids will enhance reliability, resiliency and affordability while mitigating risks. The deployment of these resources is indicative of the flexibility ETI employs in its resource planning to respond and adapt to a constantly shifting utility landscape.

[12] LRZs 8 and 10 in MISO South cleared the 2020/2021 capacity auction at a price of $4.75/MW-day, and LRZ 9 cleared the market with a price of $6.88/MW-day.

Q23. PLEASE ELABORATE.

A. ETI's long-term resource planning seeks to identify, deploy, and integrate the right mix of technology, resources, and products and services for its customers while maintaining the reliability they need and expect. The availability, reliability and quality of power are all of growing importance in our modern society and will continue to be as technology advances. For some customers, like a hospital, reliability of power supply is a more paramount concern due to an outage's impacts on the services those customers provide. ETI must be responsive to this fact in developing its long-term resource plans and design a resource portfolio that is capable of providing adequate reliability of supply for all customers as well as developing solutions for customers who desire enhanced reliability. The Company also recognizes the benefits of planning and deploying not only traditional central station power generation and transmission but also local generation that is smaller and can be dispatched in smaller increments. A fleet of natural gas-fired DG is well suited to address customers' differing demands for a reliable supply of power. In addition, deployment of such resources is consistent with ETI's guiding principles of promoting price stability and supply diversity and the planning objective of being responsive to customer-centric technological innovations.

Indeed, by combining an understanding of what its customers want with sound and comprehensive planning, ETI can better deliver the scope of utility service its customers expect while continuing to address traditional planning objectives of cost, reliability, and risk. Increasing the array of supply sources also provides an

opportunity to better meet planning principles by providing a diverse portfolio of alternatives to meet long-term capacity, transmission, and ancillary service requirements. A diverse portfolio mitigates exposure to market price volatility and risks that may occur through a concentration of portfolio attributes such as technology, location, large capital, or supply channels. Additionally, by taking advantage of evolving opportunities such as ownership and control of a fleet of DG, ETI continues its effort of modernizing its supply portfolio.

Q24. DOES ETI HAVE EXPERIENCE OPERATING NATURAL GAS-FIRED DG?

A. Yes. ETI recently commissioned its first 1.2 MW experimental DG project at an HEB in The Woodlands, Texas, which began operations in October 2019. Offers for that resource have already been selected by MISO on numerous occasions, demonstrating that natural gas-fired DG can provide energy-related benefits in the MISO markets. To date, MISO has selected this distributed generator to operate for over 360 hours during the period November 2019 – October 2020.

III. CUSTOMER BENEFITS OF POWER THROUGH GENERATORS

A. Overview of Benefits

Q25. WHAT TYPES OF BENEFITS ARE EXPECTED FROM USING THE POWER THROUGH GENERATORS TO SATISFY A PORTION OF ETI'S RESOURCE NEED?

A. There are a variety of benefits expected to be derived from deploying the Power Through generators to satisfy a portion of ETI's resource need, which fall into four general categories:

- quantifiable customer benefits;
- hard-to-quantify customer benefits;
- hard-to-quantify reliability and resiliency benefits; and
- host customer reliability and resiliency benefits.

B. Quantifiable Customer Benefits

Q26. WHAT BENEFITS MAKE UP THE QUANTIFIABLE BENEFITS EXPECTED TO BE DERIVED FROM THE POWER THROUGH GENERATORS?

A. The readily quantifiable benefits are the capacity (inclusive of an avoided line loss value) and energy that the Power Through generators will provide in helping to meet ETI's long-term resource needs and by operating as a versatile distributed resource. Mr. Knighten explains how these quantifiable benefits serve as the basis for the proposed allocation of the cost of the resources between the host customers and ETI's broader customer base.

Q27. WHAT IS THE CAPACITY BENEFIT OF THE POWER THROUGH FLEET?

A. As noted above, ETI undertakes long-term planning and commitment to long-term resources to fulfill its obligations to provide sufficient resources to serve customers reliably and economically while mitigating exposure to market and reliability risks. ETI's projected load exceeds its long-term resources, including peaking and reserve capacity. Because the Power Through fleet will fill a portion of that need, the value of that capacity is the same as a long-term, supply-side resource that would otherwise satisfy ETI's capacity needs. That value is best represented by the levelized fixed cost of a new-build CT, which is currently a standard planning assumption for the lowest-cost known option for adding long-term capacity that will serve in a peaking and reserve supply role. Based on ETI's cost of capital and cost to build, maintain and operate a new CT, that value is $72.95/kW-year.[13]

Q28. HOW DID YOU ESTIMATE THE COST OF A NEW-BUILD CT?

A. I relied on the Technology Assessment maintained for the EOCs. The Technology Assessment relies on industry data (including similar projects recently built) to develop assumptions for installed costs and ongoing operation and maintenance costs for generic generation projects, including a new-build CT. The levelized fixed cost of a new-build CT was estimated by calculating the return of and on rate base, fixed operation and maintenance, and taxes other than income taxes over the useful life of

[13] This value is an annual average for the period 2022-2025 over which ETI expects to deploy the 75 MW Power Through fleet.

the CT, and then converting that fixed cost to an equivalent annual stream that results in the same present value.

Q29. WHAT IS THE AVOIDED LINE LOSS BENEFIT CREATED BY THE POWER THROUGH FLEET?

A. Electricity is lost as heat as it travels over wires, transformers, and switching devices, which is referred to as line losses. The cumulative transmission and distribution system loss factor calculated in conjunction with ETI's last base rate case was 8.13 percent. By distributing generation close to load, line losses in the transmission system are avoided and line losses in the distribution system are reduced. Thus, the Power Through capacity value discussed above will be grossed up by the system line loss factor to estimate the value of the additional system capacity required to compensate for line losses that is avoided by deployment of the Power Through fleet. That adjustment results in a total capacity value of $78.86/kW-year, which is the Capacity Value used to develop the rate schedule for backup electric service discussed by Mr. Knighten.

Q30. WHAT IS THE ENERGY BENEFIT EXPECTED FROM THE POWER THROUGH GENERATORS?

A. In those instances when generation is selected for commitment and dispatch, that generation can lower energy cost and earn energy margins. The energy margins are credited back to customers in the form of an offset to fuel expense. In this case, I

expect the Power Through fleet to lower ETI's energy cost and produce energy margins when the generators are committed and dispatched due to favorable market conditions.

Q31. WHAT IS THE BASIS FOR YOUR EXPECTATION THAT THE POWER THROUGH FLEET WILL PRODUCE ENERGY BENEFITS?

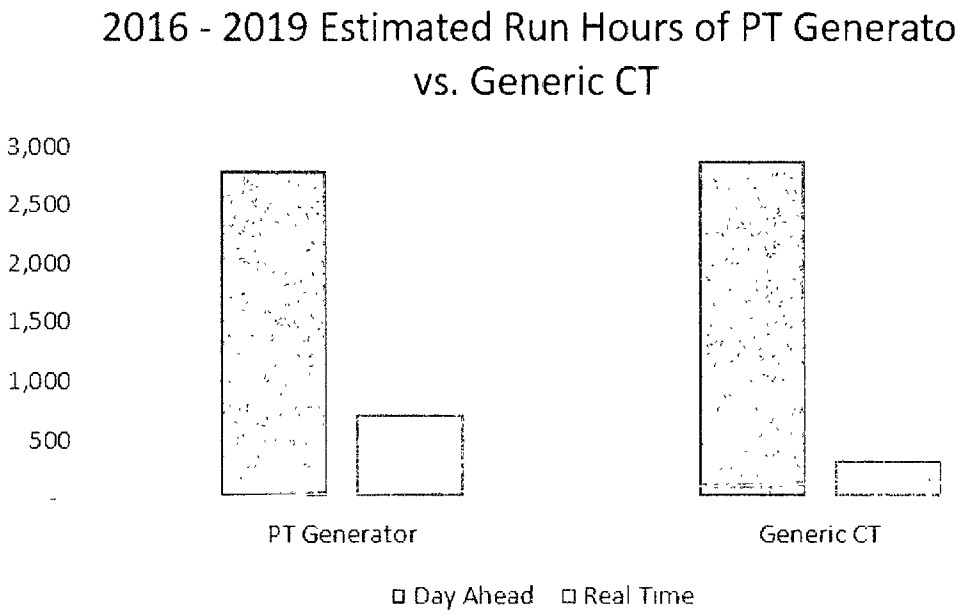
A. An analysis of historical LMP data for the ETI Load Zone shows there will be opportunities for Power Through generators to lower energy cost and earn energy margins. This is primarily due to the size and quick-response of a Power Through generator relative to other peaking resources, which allow it to respond to quickly changing market conditions. These operational characteristics serve as a diverse and complementary resource to ETI's other generation assets.

Q32. PLEASE DESCRIBE THE ANALYSIS OF HISTORICAL LMPS.

A. A historical analysis was conducted to test the potential run hours for a Power Through generator. The analysis compared an estimated Power Through generator dispatch price to the historical hourly LMP over the period 2016 – 2019 and focused on one of the unique operating attributes of the Power Through generators – that they are highly flexible with minimal run time (*e.g.,* five minutes). As compared to a larger, central station peaking resource like a CT with a four-hour minimum run time, a Power Through generator with a minimal run time could provide additional run hours compared to a CT. The analysis first identified the hours in which the average

LMP for the ETI Load Zone LMP exceeded the dispatch cost of the resource as potential "run" hours. All run hours for the Power Through generator were counted because it has a minimum run time of well less than one hour. However, for the CT, only those run hours where the sum of the CT's margin in a minimum of four consecutive hours was economic were counted as potential "run" hours. The "run" hours for each generator are shown in Figure 2 below.

Figure 2: Simplified Depiction of Dispatch Logic



The analysis shows the Power Through resource could have run over 3,000 hours over the four-year period 2016-2019. Also, the analysis indicates that the Power Through resource is more likely to be called on to run in the real-time market as opposed to a CT.

Q33. HOW WILL THE POWER THROUGH GENERATORS BE REGISTERED IN MISO TO OBTAIN THESE CAPACITY AND ENERGY BENEFITS?

A. The Company will register the Power Through generators as both Load Modifying Resources ("LMRs") and Demand Response Resources ("DRRs") in MISO. As LMR(s), the Power Through fleet will be used to satisfy the annual resource adequacy requirements imposed on the Company by MISO. As DRR(s), the Power Through fleet (or subsets thereof) will be offered into MISO's day-ahead and real-time energy and ancillary services markets. When MISO selects a DRR offer, the Power Through generators will deliver energy using the local distribution system and thereby reduce the load placed on the bulk transmission system and market supply-side resources.

The addition of LMRs will help to mitigate against increases in the clearing price for capacity in ETI's LRZ in MISO's annual capacity auction.[14] With regard to energy and ancillary services, my analysis of historical LMPs discussed above suggests there will be opportunities when Power Through generation will be the most economical solution.

[14] For perspective, the capacity value of $78.86/kW-year calculated above is less than the CONE price of $86.35/kW-year from the most recent MISO capacity auction.

C. Hard-to-Quantify Customer Benefits

Q34. WHAT ARE THE HARD-TO-QUANTIFY BENEFITS EXPECTED TO BE OBTAINED FROM THE POWER THROUGH FLEET?

A. The hard-to-quantify benefits generally fall in the same categories discussed above, *i.e.,* capacity benefits, transmission and distribution-related benefits and energy benefits.

Q35. PLEASE DESCRIBE THE HARD-TO-QUANTIFY CAPACITY-RELATED BENEFITS EXPECTED FROM THE POWER THROUGH FLEET.

A. There are several hard-to-quantify capacity-related benefits. First, a Power Through fleet represents a diverse set of resources that will enhance resource availability. For example, operation of a single, supply-side resource presents the risk that a single point of failure (*e.g.*, transformer failure) can render that resource temporarily out of service. In contrast, there is no material risk that a single point of failure would render an entire 75 MW Power Through fleet of DG resources unavailable at the same time. Some small percentage of the Power Through generators might be unavailable at any given time such that their aggregate capability is reduced, but it is not lost entirely. Thus, a Power Through fleet should present less risk regarding exposure to replacement power costs incurred during a unit outage.

Second, the Power Through fleet will be comprised of natural gas-fired reciprocating internal combustion engines, which are very flexible resources that have the capability to provide incremental energy and cycle back down quickly. It is well

recognized that such highly flexible resources are necessary to support integration of intermittent resources into the grid.[15] Indeed, regulators in some jurisdictions have recently approved installation of reciprocating engines specifically to support renewables and ensure reliability.[16] The Power Through fleet with that capability would be well-situated to support ETI's plan to integrate intermittent resources into its resource portfolio.[17]

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[15] According to the U.S. Energy Information Administration ("EIA"), one of the main advantages of reciprocating engines is their ability to provide incremental electricity quickly, which, the EIA states "has become increasingly important in areas with high shares of renewable electric generation from wind and solar." *Natural gas-fired reciprocating engines are being deployed more to balance renewables*, U.S. Energy Information Administration (Feb. 19, 2019), available at www.eia.gov/todayinenergy/detail.php?id=37927.

[16] Hawaii approved an application by Hawaii Electric Company ("HECO") to purchase and install six 8.4 MW reciprocating engines. In the approval order, the Hawaii commission noted that "Quick-starting units such as the [internal combustion engine] units selected for the Project are needed to complement the technical advantages of existing units to not only ensure reliable power to customers, but to enable the integration of more cost-effective variable renewable generation." *In the Matter of the Application of Hawaiian Elec Co , Inc.*, Docket No. 2014-0113, Order No. 331778, Decision and Order, at 1 and 23 (Sept. 29, 2015).

The Michigan Public Service Commission approved construction of natural gas-fired reciprocating engines, stating that the new gas-fired electric generation "is adaptable to the changing needs of the region—whether that is helping to serve a growing customer base spurred by economic development, providing a foundation for adding renewable energy, or investing in ways to cut energy waste in homes and buildings." Available at: www.michigan/gov/mpsc/0,4639,7-159-16400_17280-450695--,00.html.

The New Orleans City Council approved Entergy New Orleans, LLC's application to construct seven reciprocating engines to be known as the New Orleans Power Station. The Council found that the reciprocating engines provide "operational flexibility that will support incorporation of renewables into ENO's generation portfolio, a key goal of the Council and the City." *Application of Entergy New Orleans, Inc for Approval to Construct New Orleans Power Station and Request for Cost Recovery and Timely Relief*, Docket No. UD-16-02, Resolution R-18-65 at 109 (March 8, 2018, appeal pending).

[17] ETI recently negotiated a purchased power agreement for 150 MW from a solar PV resource beginning December 31, 2023. The Company also has pending a request to construct a 99.96 MW solar PV resource expected to be in service by May 31, 2023. *See Application of Entergy Texas, Inc to Amend its Certificate of Convenience and Necessity for Acquisition of a Solar Facility in Liberty County*, Docket No. 51215 (pending).

Q36. WHAT ARE THE HARD-TO-QUANTIFY TRANSMISSION AND DISTRIBUTION RELATED BENEFITS EXPECTED FROM THE POWER THROUGH FLEET?

A. The location of a Power Through generator (properly sized to serve a host customer's load) on the distribution system may, in the future, reduce distribution infrastructure costs. As explained by Mr. Barrett, ETI is taking steps to further modernize its distribution grid. With the deployment of advanced metering systems and other grid modernization efforts, ETI expects that distribution planning will eventually be able to utilize more granular, real-time load data to develop feeder and/or area load profiles to better plan capital improvements. That modeling will include the presence and any benefits of DG. Several industry organizations have asserted such capability may result in deferring or avoiding infrastructure investments.[18]

Also, resources connected at the distribution level and controlled by the utility can provide distribution frequency, voltage, reactive power, and power quality support. Further, because utilization of those resources can reduce demand on the transmission system, they offer another tool to manage the utilization of the transmission system to mitigate the risk of demand-related outages. For example,

[18] Several industry organizations have recognized that strategic deployment of distributed generation and related technologies can strengthen weaker parts of a distribution system, thereby deferring some major infrastructure upgrades that would otherwise be necessary. *Microgrid Guide for Publicly Owned Critical Infrastructure* at 24, U.S. Department of Energy (available at: https://microgridknowledge.com/microgrid-development-phases/), citing (1) NEMA, Powering Microgrids for the 21st Century Electrical System (2016); (2) Lawrence Berkeley National Laboratory, "Value Streams in Microgrids: A Literature Review" (2015); and (3) Berkeley Lab, Grid Integration Group, "Microgrids at Berkeley Lab" (2016). *See also The Value of Integrating Distributed Energy Resources in Texas* at p. 13, Demand Side Analytics (November 2019), in which the authors concluded that "Infrastructure expansion due to peak load growth can be reduced, deferred, or avoided by DERs that either inject power locally or reduce demand."

following Hurricane Laura, the Western portion of ETI's service territory was required to operate under severe transmission import limits for a period of time until additional transmission ties into the region could be restored. Those operating limits presented a risk for load curtailments. The Woodlands HEB generation set was operated to supply power to the distribution system and reduce the amount of load curtailment risk.

Q37. DOES THE POWER THROUGH FLEET PROVIDE AN OPPORTUNITY FOR OTHER ENERGY-RELATED BENEFITS?

A. Yes. The very low minimal run time for Power Through generators affords flexibility to operate those resources on an intra-hour basis when it is beneficial to do so (*e.g.*, due to extreme weather or an unexpected forced outage at a larger generator).

D. Hard-to-Quantify Resiliency and Reliability Benefits

Q38. PLEASE EXPLAIN HOW DEPLOYMENT OF THE POWER THROUGH FLEET WILL PROVIDE RESILIENCY AND RELIABILITY BENEFITS.

A. There are community resiliency benefits from facilities like gas stations, grocery stores, first responders, and medical facilities having the capability to operate during an outage, especially during an outage that lasts for more than a few hours to several days. During extended outages, a gas station that can provide fuel or a grocery store that can provide supplies like water, ice, medicine, and food would be of tremendous assistance both in circumstances requiring evacuations as well as circumstances

where customers may shelter in place. Of course, first responders and medical facilities are critical to restoration efforts during severe weather events and providing essential services during extended grid outages.

One need look no farther than the extended outages that occurred in Houston and along the Texas coast following Hurricane Harvey to understand the community benefits of having infrastructure in place that is able to do more than support short-term outages and instead support critical community functions during longer-term grid outages caused by severe weather emergencies, which are only expected to increase over the ensuing years.[19] For example, as explained below, several HEB stores in Houston were able to continue providing critical supplies and support during Hurricane Harvey using the same type of on-site generation that would be made available to ETI customers as the Power Through fleet.

The recent restoration effort following Hurricane Laura is another example where DG provided grid resiliency. ETI deployed mobile DG sets to hotels so that they had power to house crews working to restore the grid.

Another important resiliency benefit category is schools. Deploying Power Through generators at schools means that students can remain in their classrooms during power outages. Cost-effective backup generation at schools may allow parents to remain at work during longer-term local outages instead of having to leave early to

[19] *See, e g , A Customer-focused Framework for Electric System Resilience* at 27-28, Grid Strategies, LLC (May 2018) ("Grid Strategies Whitepaper"). Available at: https://gridprogress.files.wordpress.com/2018/05/customer-focused-resilience-final-050118.pdf. More recently, a derecho event in August 2020 left hundreds of thousands of customers in the Midwest without power for multiple days.

pick up their children. As discussed by Mr. Barrett, schools are well positioned to make use of Power Through generators.

Other businesses and services that could potentially provide community resiliency benefits from hosting a Power Through generator include:

- cellular communications equipment, including towers and data centers;
- public works facilities like water treatment plants, water supply pumping stations, and road and bridge crew warehouses; and
- natural gas processing plants and compressor stations.

E. Host Customer Reliability and Resiliency Benefits

Q39. ARE YOU AWARE OF ANY TRENDS IN CUSTOMER INTEREST IN ENHANCING RELIABILITY?

A. Yes. In a recent paper developed by Grid Strategies, LLC, the authors noted that customers nationally are increasingly taking independent action to improve their ability to withstand extended outages comfortably.[20] The authors cite several examples, including $12 million that New York State funded for installation of permanent emergency generators at retail gas stations to ensure they can function during storms and emergencies.[21] Closer to home, many are aware of the success that Enchanted Rock generators operating in ERCOT achieved in providing power for HEB stores in the Houston area following Hurricane Harvey. As one article noted:

[20] Grid Strategies Whitepaper at 41.

[21] *Id*

> Enchanted Rock disconnected HEB's microgrid stores from the main power grid on Friday and switched over to on-site generators, which are fed by underground natural gas pipelines that are not affected by wind or flooding.[22]

In total, 18 HEB stores operated in full backup mode for five consecutive days following Hurricane Harvey, providing food, water, medicine, and other resources for the community. Three Buc-ee's travel centers were also able to remain operational using Enchanted Rock's technology, one of which provided a base of operations for first responders. The full-scale deployment of Power Through generators will allow ETI to enter similar arrangements with its customers, and, as noted earlier, expand upon its experimental project with an HEB store in The Woodlands, Texas using an Enchanted Rock generator. Company witness Mr. Barrett further discusses the types of customers that are most likely to have an interest in backup electric service using Power Through generators.

Q40. PLEASE EXPLAIN HOW HOSTING POWER THROUGH GENERATORS TO SUPPLY BACKUP ELECTRIC SERVICE WILL PROVIDE THE HOST CUSTOMER ENHANCED RELIABILITY AND RESILIENCY BENEFITS.

A. At a macro-level, siting natural gas-fired DG at a host customer's location to supply backup electric service will mitigate that customer's risks associated with a power outage, which provides both reliability and resiliency benefits in that the customer's expectation of uninterrupted power is enhanced, as is the customer's ability to

[22] https://www.bizjournals.com/sanantonio/news/2017/08/28/microgrids-pass-crucial-test-for-heb-during-harvey.html.

withstand power outages affecting the rest of the grid when they do occur. Each system will be designed with an Automatic Transfer Switch ("ATS"), meaning the switchover in the event of a power outage would be fast and automatic with the customer being only momentarily interrupted, if at all. This means that the host customer will have enhanced reliability and resiliency via a dedicated power supply when the surrounding electrical system is experiencing a power outage. For example, according to Enchanted Rock, its generators, which would be available to host customers, provide over 99.999 percent availability.[23] Moreover, unlike more traditional, diesel back-up generation where the on-site fuel will eventually be exhausted, the natural gas-fired Power Through generators will be available to provide backup electric service to customers hosting the equipment potentially indefinitely.

Q41. WHERE DO MOST POWER OUTAGES OCCUR AND WHAT IS THE MOST COMMON CAUSE?

A. The U.S. Department of Energy reports that 90 percent of power interruptions occur on the distribution system, and most are weather-related.[24] While minor storms tend to be more frequent and cause mostly short-term outages, the less frequent but more

[23] http://enchantedrock.com/back-up-power-as-a-service/.

[24] *Quadrennial Energy Review Second Installment Transforming the Nation's Electricity System*, Chapter IV at p. 4-29, U.S. DOE, (January 6, 2017). Available at https://www.energy.gov/sites/prod/files/2017/02/f34/Chapter%20IV--Ensuring%20Electricity%20System%20Reliability%2C%20Security%2C%20and%20Resilience.pdf.

severe storms tend to cause longer outages.[25] Damage to transmission systems is less frequent, but transmission-level damage can result in more widespread power outages that affect a large number of customers with significant economic impact.[26] According to a report from the Executive Office of the President, weather-related outages are estimated to cost the U.S. economy $18 billion to $33 billion annually.[27] Hurricane Harvey's costs exceeded $125 billion.[28]

Having a natural gas-fired generator at the distribution level to supply backup electric service would provide protection from local outages, as well as longer-duration larger-scale, severe weather and transmission system outages. Further, having an always-available power source that can provide backup electric service indefinitely should mitigate the economic impact of an event, which can include lost sales, wages and output, spoiled inventory, damaged machinery, data loss, and delayed production.[29]

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[25] Average frequency and duration of electric distribution outages vary by states, U.S. DOE (April 8, 2018). Available at https://www.eia.gov/todayinenergy/detail.php?id=35652.

[26] *Id.*

[27] *Economic Benefits of Increasing Electric Grid Resilience to Weather Outages* at p. 3, Executive Office of the President (August 2013), available at https://www.energy.gov/downloads/economic-benefits-increasing-electric-gridresilience-weather-outages.

[28] www.climate.gov/print/830940.

[29] *See* Grid Strategies Whitepaper at p. 41.

Q42. BY VIRTUE OF ITS LOCATION IS ETI'S SYSTEM SUSCEPTIBLE TO WEATHER-RELATED OUTAGES AND ASSOCIATED ECONOMIC IMPACTS?

A. Yes. ETI's southern location along the Gulf Coast makes it vulnerable to high wind speeds, flooding, lightning strikes, and high temperatures. In particular, Hurricane Ike, which caused significant damage to ETI's service area, is estimated to have cost $40 billion to $75 billion in economic damage.[30]

Hurricane Laura is a more recent example of the extent of weather-related outages on ETI's system. The damage caused by that storm led to roughly 70,000 ETI customers experiencing an outage of 24 hours and over 30,000 customers experiencing an outage duration of more than 48 hours.

Q43. WHAT ARE THE ECONOMIC BENEFITS TO A HOST CUSTOMER?

A. By hosting a Power Through generator, a host customer gains access to backup electric service from a natural gas-fired generator for less than it would cost that customer to purchase, operate, and maintain an equivalent generator solely for their own backup power needs. This arrangement not only allows the host customer to avoid a large, up-front capital expenditure, but it also utilizes ETI's and its partner-vendors' expertise in sizing, installing, operating, and maintaining the unit. In other words, this arrangement provides greater convenience to the host customer and spares that customer the time and expense that may otherwise be required to size, purchase, install, and maintain an equivalent natural gas-fired generator on their own.

[30] *Id.*

The host customer will also obtain the economic benefit of avoiding or mitigating the cost of a power interruption to its business enterprise.

IV. TECHNICAL CHARACTERISTICS AND ESTIMATED COSTS OF POWER THROUGH GENERATORS

Q44. PLEASE DESCRIBE THE TYPES OF DG THE COMPANY WILL DEPLOY AS THE POWER THROUGH FLEET.

A. ETI will deploy natural gas-fired generators (reciprocating internal combustion engines) ranging in sizes of 100 kW up to 10 MW that ETI will install, operate, and maintain on customers' premises but located on the Company's side of the electric meter. While performance will vary by size and specific application, the general characteristics of generators in this size range include the ability to start and reach full load quickly (typically in less than five minutes and some even less than a minute), have short run-cycle requirements, can be started and stopped multiple times per day, and can serve intra-hour demands, if needed. They are also relatively small, which facilitates ease in siting. The efficiency of the generators is consistent with a peaking resource with their heat rates expected to range from 9,000 Btu/kWh to 12,000 Btu/kWh, depending on the size and configuration of the generator.

The generators will be equipped with switching and controls to provide automatic backup power to the host customer during outages and the ability to be remotely dispatched to provide energy to or reduce load on the distribution grid at all other times. An ATS will provide the automatic outage function and interconnection point to the distribution grid. A control gateway will provide the remote monitoring