

# CASE STUDY

## Entergy Corporation Power Through

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### CHALLENGE:

Provide backup power generation to help close the gap between the dramatic increase in electrical demand and not enough supply.

### SOLUTION:

Generac natural gas solutions consisting of generators ranging from 100 kW to 500 kW.

### RESULT:

An affordable backup generation solution for the end user that also provides capacity and energy benefits for all customers in Entergy's service territory.



***“Entergy’s Power Through program provides a unique opportunity for our customers in their service territory to not only receive the resiliency of a standby generator system, but at a discounted rate that can be paid on their monthly utility bill.”***

## Building Power Grid Resilience with Generac Gaseous Generators

Power outages have become more prevalent and more problematic in recent years, especially in an increasingly connected world. Peak energy demand is when electrical power is expected to be provided for a sustained period at a significantly higher than average supply level. When maximum supply levels are surpassed, power outages can happen. Grid power supply is also becoming more irregular with the retirement of historical coal and nuclear assets, as well as the incremental addition of intermittent renewable wind and solar sources.

“The potential for brownouts or outages are driving creative solutions to close the gap between the dramatic increase in demand and not enough supply,” said Jamie Smith, Vice President of Global Sales at Generac Power Systems. “Long and expensive permitting processes around environmental constraints and land purchases/rezoning makes power grid upgrades costly.”

Seeing the need for a solution, Entergy Corporation developed the Power Through program. “Entergy’s energy resilience service provides backup power generation to participants at a discount by delivering power to the grid when favorable market conditions exist,” said Lyndon Dupont, Director-Business Operations for Power Through, Entergy Corporation. “The generator is

seamlessly dispatched to benefit businesses and their community by running during peak load moments, lowering power prices for everyone.”

Entergy Corporation is an integrated energy company engaged in electric power production, transmission and retail distribution operations. Under the Power Through program, participating customers get reliable backup power for a monthly fee with no upfront cost, the generator is used at times to feed power into the grid, which results in a discounted cost for a generator solution. Entergy said commercial and industrial customers benefit greatly from the Power Through program. “Power Through offers an affordable backup generation solution for the host customer (end user), while also providing capacity and energy benefits for all customers in Entergy’s service territory,” said Dupont. “Additionally, this program/business model increases community resiliency during major weather/outage events, such as hurricanes, tornadoes and winter weather events.”

Entergy said the value of the Power Through program is twofold. First, the purpose of the program is to solve a customer friction that involves the loss of services the customer is providing during system outage situations. The program allows the



**APPLICATION:**  
Energy Management

**MODELS:**  
100 kW to 500 kW natural gas generators



customer to solve that friction while doing so at a fraction of the cost due to the market and planning values the generators provide to Entergy. Market and planning value is determined via two paths. The asset is first registered with Midcontinent Independent System Operator, Inc. (MISO) as a demand response Load Modifying Resource (LMR) product that allows Entergy to utilize the resource for planning. This allows Entergy to use the operation output value of the resource towards their forecasted MISO coincident peak demand, as required for any load serving entity in the MISO market. The MISO LMR then earns capacity planning resource value and the revenue is derived through an annual Planning Resource Auction that is paid daily on a \$/MW day price. Second, the generator will be registered in MISO as a Demand Response Resource (DRR) that allows the asset to participate in the energy and operating reserve market. This will allow the asset to be offered daily to MISO in both the Day Ahead and Real Time markets, and MISO will be able to dispatch the generators for either economic or reliability purposes. As a result, the assets earn energy and operating reserve revenue due to system conditions.

Entergy said it is easy for a customer to get involved in the program. “Entergy has worked with its internal customer service organization to identify customers that have a need for backup generation and that meet the criteria for the program,” said Lyndon. “We have also partnered with vendors, distributors and contractors that serve the Mississippi market, that have provided sales leads that could benefit from the sales offering developed for this pilot.”

Two Entergy customers who wanted to join the Power Through program were Quitman County Health and Rehab as well as Greenlee Shoprite. Quitman County Health and Rehab is a nursing home and a rehabilitation facility and due to the general nature of their facility, energy resiliency and reliability was of great importance. Greenlee Shoprite is a grocery store located in rural Mississippi. Many members of this community travel many miles to shop at the store for necessities. During area power outages, the facility wanted to use their location as a hub to

ensure citizens have access to what they need to survive during times of disaster.

The Power Through program offers affordable, high-quality natural gas generators that are installed by a partner vendor. For these two projects, Entergy partnered with Generac Industrial Power’s distributor Energy Systems Southeast (ESSE) for design, installation and maintenance of the system. “Entergy’s Power Through program provides a unique opportunity for our customers in their service territory to not only receive the resiliency of a standby generator system, but at a discounted rate that can be paid on their monthly utility bill,” said Alan Friday, Executive Vice President, ESSE. For Power Through, Entergy said they specify natural gas fueled generators as they provide a reliable, clean fuel source that fits their business model and can be easily permitted for market dispatch applications.

When designing for these projects, several key elements needed to be kept under consideration. First, generators used in a non-standby application have different emissions requirements that are set by the Environmental Protection Agency (EPA) and require a different emissions certification than a standby generator. Generac Industrial Power’s natural gas generators are factory EPA certified to be used in a non-emergency application, meaning the end user does not have to apply for a generator emissions certification and they do not need any type of site testing to obtain an emissions certification. Beyond standby applications are best suited for natural gas generators, as costs for achieving diesel emissions compliance in a nonemergency application often exceed the potential benefits. Entergy has approval to install generators ranging from 100 kW to 500 kW.

A Generac 100 kW natural gas generator was ultimately chosen to provide services for Quitman County Health and Rehab while a Generac 130 kW natural gas generator was specified for Greenlee Shoprite. Both units provide enough power to back up the entire facility when called upon during a power outage or during peak demand, making it the ultimate solution.

Now that the units are installed, Entergy is remotely controlling the assets from their Energy Management Organization 24/7. The Energy Management Organization group is the team that interfaces with MISO regarding the market operations and dispatching of Entergy's generators. The user interface provides Entergy operational data in real time as well as warning and emergency notification regarding generator issues.

"We have completed generator installations at two customer sites thus far in Mississippi. We have not experienced any notable challenges with the construction process," said Dupont. Entergy and Generac are currently working on several other projects together in Mississippi and will be expanding into other states where Entergy has an operating footprint once the appropriate regulatory approvals are achieved.