

Project Profile

Ercot Facility
Generation Storage Application
TEXAS, USA



Project Facts

System Benefit:

- 37.5 net MW added
- Improvement in heat rate

Ambient Design Conditions:

- 95°F (35°C) dry bulb
- 75°F (24°C) wet bulb

Generation Storage System:

- 1 x 60 Hz Chiller, 3,700 TR (13,012 kWth)
- 1 x 1.73 million gallons Thermal Energy Storage (TES) Tank

Gas Turbine Information:

- 1 x Siemens SGT6-5000F



Project Challenge

The plant had an existing evaporative cooling solution that was only producing 227MW during the critical hot and humid summer months. A solution needed to be implemented that would result with increased output to meet the high demand during the summer peak period.

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The Solution

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TAS Energy was able to provide the plant with a Turbine Inlet Chilling (TIC) and energy storage solution called Generation Storage®. This allowed the plant to improve output by 17% to 266MW.

For this plant, the Generation Storage solution was a packaged integration of TAS Energy's patented TIC system with a 1.73 million-gallon (TES) tank. This solution allows the plant operator to pull electricity from the grid at night-time hours (and pricing) to chill the water and have it stored for use the following day during the peak demand.

About TAS Energy

TAS Energy provides clean and highly efficient solutions through the design and manufacturing of modular energy conversion and cooling systems for the power generation industry; district, commercial and industrial process cooling; data center/mission critical; and the renewable energy sectors.

Results

- Enhanced power capacity by cooling the inlet air to 50°F (10°C), the plant's output increased from 227MW to 266MW, a 17% increase in power output.
- Project duration was 34 weeks from signing to performance testing.
- The change from the evaporative cooler to TIC included minimal interruption with a 30% time reduction of the planned outage.
- Use of Generation Storage allows the plant to use stored chilled water at the highest peak power pricing, when the ISO is at its greatest need to service ERCOT's load requirements.

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