AEIC Member Spotlight on Tampa Electric

Modernization Project: Cleaner, More Efficient Power

BY AEIC CEO STEVE HAUSER

Since its founding by Thomas Edison in 1885, AEIC's members have established a legacy of industry leadership, from invention and construction of the early electric grid to today's innovative approaches to grid modernization and a cleaner, low-carbon future.

In 1887, Tampa Electric (TECO) installed downtown Tampa's first electric streetlight. Crowds gathered in awe, and newspapers reported on the "light show." More than one hundred thirty-five years later, Tampa Electric is continually working to improve system operations to benefit the customers and the community they serve.

Two recent Tampa Electric projects illustrate how AEIC's members are leading the industry through operational innovation and grid modernization initiatives designed to provide cleaner, more efficient electric power now and in the future.

This past December, Tampa Electric completed a project that modernized its power plant at Big Bend in Apollo Beach. The project repowered Big Bend Unit 1 with state-of-the-art combined-cycle technology and eliminated coal as that unit's fuel. It is now Tampa Electric's most efficient generator.

The modernized unit can produce one thousand ninety megawatts, or enough energy to power more than two hundred fifty thousand homes. The project is part of the company's strategy to further reduce its carbon footprint and plays a significant role in changing the company's fuel mix.

In 1998, ninety percent of Tampa Electric's energy was generated from coal. In 2023, more of Tampa Electric's energy will be generated from the sun than from coal.

Tampa Electric approached the Big Bend project through an engineering, procurement, and construction management approach, where Tampa Electric had overall project and construction management responsibility.

The site construction management team consisted of integrated staff of Tampa Electric and project partner, Sargent & Lundy. Kiewit/TIC was the general work contractor whose scope included everything except initial site prep and deep foundations. Additional project partners included General Electric and Vogt.

The Big Bend modernization project was completed on time and under budget despite facing several challenges related to dismantlement of the existing coal-fired unit, the need to construct a large pipe bridge over a canal due to existing site layout constraints, and the impact of the ongoing global pandemic on the workforce and supply chain. It should also be noted that project crews worked more than three and a half million hours with no lost-time injuries.

The Big Bend modernization project was completed on time and under budget despite challenges to dismantlement of the coal-fired unit, need to construct a large pipe bridge over a canal, and impact of the ongoing global pandemic.

Tampa Electric forecasts that the project will save customers more than seven hundred million over its thirty-year life, while improving the land, water, and emissions at Big Bend.

In conjunction with the recently completed upgrade to the Big Bend Power Station, three new solar plants have recently begun producing electricity from the sun, helping the company reach a new milestone in its significant solar expansion.

These solar projects presented technical challenges to the project teams by requiring standardization with a new inverter manufacturer, standardization of the racking system, and upgraded photovoltaic (PV) modules. In addition,

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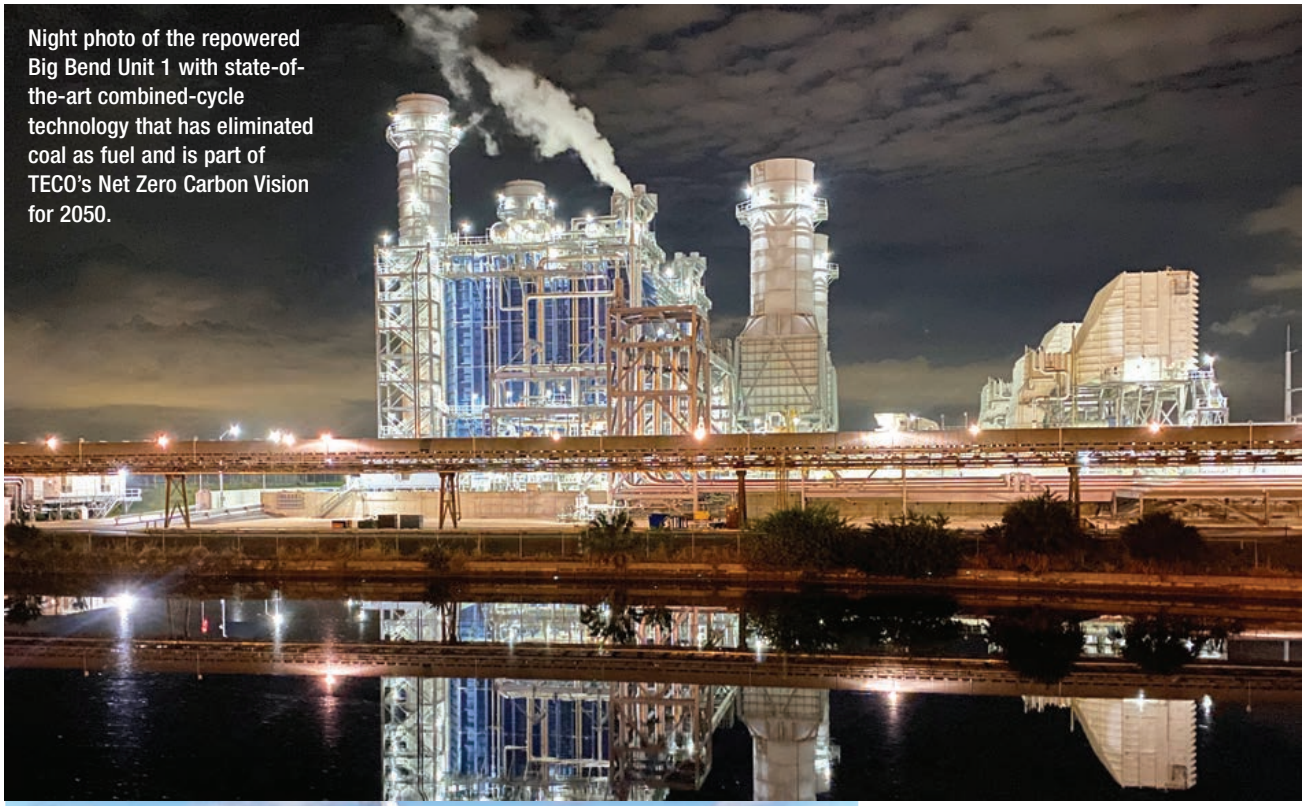

Night photo of the repowered Big Bend Unit 1 with state-of-the-art combined-cycle technology that has eliminated coal as fuel and is part of TECO's Net Zero Carbon Vision for 2050.

TECO's floating solar panels at the Big Bend plant.

the construction process required careful planning to minimize impacts to wildlife and existing landscape, including gopher tortoises, kestrels, eagles, and grand oak trees.

Tampa Electric's solar projects can now produce a thousand megawatts (one gigawatt) of electricity, enough to power more than one hundred sixty thousand homes. Tampa Electric currently has another two hundred thirty megawatts of solar power under construction, with more planned by the end of 2025.

At that time, the company will have more than sixteen hundred megawatts of solar, which will be able to serve two hundred sixty thousand homes. When those projects are complete, Tampa Electric will have about seventeen percent of its energy generated from the sun. Solar power is a critical step in the industry's path toward a net-zero carbon future.

Tampa Electric's investment in solar energy helps to save fuel costs for customers and reduce the impact of volatile natural gas prices. In 2022 alone, solar power saved customers eighty million in fuel costs.

Tampa Electric is committed to a cleaner energy future, and these solar projects will reduce carbon dioxide emissions by more than 2.35 million tons every year, which is roughly equal to removing five hundred thousand cars from the road.

Tampa Electric's upgraded Big Bend Power Station and solar investments have dramatically changed how the company creates electricity. This year, their fuel mix is expected to be about eighty-five percent natural gas, nearly ten percent solar, and only five percent coal.

That will continue to shift as they move forward with long-term plans to further reduce carbon emissions.

This is a snapshot of the industry-leading grid modernization work being done by just one of the more than one hundred eighty-five AEIC member utilities in the U.S. and Canada. We have many more great stories to tell. Stay tuned! PUF