

South Australia



APR Energy's Solution

In 2017, APR Energy was contracted by SA Power Networks (SAPN) to install nine GE TM2500 Gen 8 mobile gas turbines with a generating capacity of 276MW at two sites near Adelaide. SAPN and the South Australia government selected APR Energy's mobile gas solution to mitigate against South Australia's high reliance on intermittent renewables ahead of the peak summer temperatures.

The turbines' fast-start capabilities and in-built Power System Stabilizer technology both played a vital role in maintaining grid stability by rapidly injecting large blocks of power while regulating the grid voltage and frequency levels. APR Energy's turbines provided South Australia with fuel flexibility, as the turbines initially ran on diesel fuel with the capability to seamlessly transition to natural gas.



EXCEEDING EXPECTATIONS

From completing the project well within the required timeline, and creating fuel flexibility from diesel to natural gas, APR Energy exceeded the project's requirements.



BRIDGING POWER

APR Energy's TM2500 was an ideal complement with South Australia's intermittent wind power, as it helped to maintain the country's grid stability, especially during peak summer demand.

PREPARING FOR LONG-TERM SUCCESS

APR Energy commissioned its TG North and TG South plants near Adelaide in early November, only three months after putting the first of the turbines on a ship in Slovenia. The delivery was well ahead of the South Australian government's goal deadline of December 1, 2017.

9 **TM2500+**
GEN8
gas turbines



The turbines offered significant environmental benefits for South Australia, including up to **94% lower NOx emissions**, significantly less carcinogenic particulate matter and **20% less noise** than the emissions-intensive diesel reciprocating engines typically found in the temporary power market.



Background

On July 7, 2016, a sudden and significant dip in wind destabilized the South Australia power grid, plunging the entire state into darkness. At the time, wind generated between 49% and 100% of South Australia's electricity on a given day, so the blackout had major economic implications for South Australia's energy-intensive industries, far beyond disrupting the daily activity of South Australians. On September 28, 2016, severe thunderstorms damaged South Australia's power generation equipment, causing the second blackout in three months. Wind gusts up to 260 kilometers per hour caused nine of the state's 13 operating wind farms to shut down, immediately removing 15% of the overall power supply. Following a third, smaller power outage in December, South Australia's government introduced a long-term energy strategy, which began with the fast-track installation of mobile power plants to protect the state from further power outages.

TESTIMONIAL

"APR Energy's solution with the turbines has made an important impact on the overall ability of the South Australian government's energy plan to be delivered in such a short period of time. We have the world's highest penetration of renewables on the national grid, and the back-up power provided by these turbines for emergency situations when the market is unable to respond provides an important security service for stability and reliability of the system."

Nick Smith

Director, Energy Programs and Services Government of South Australia

