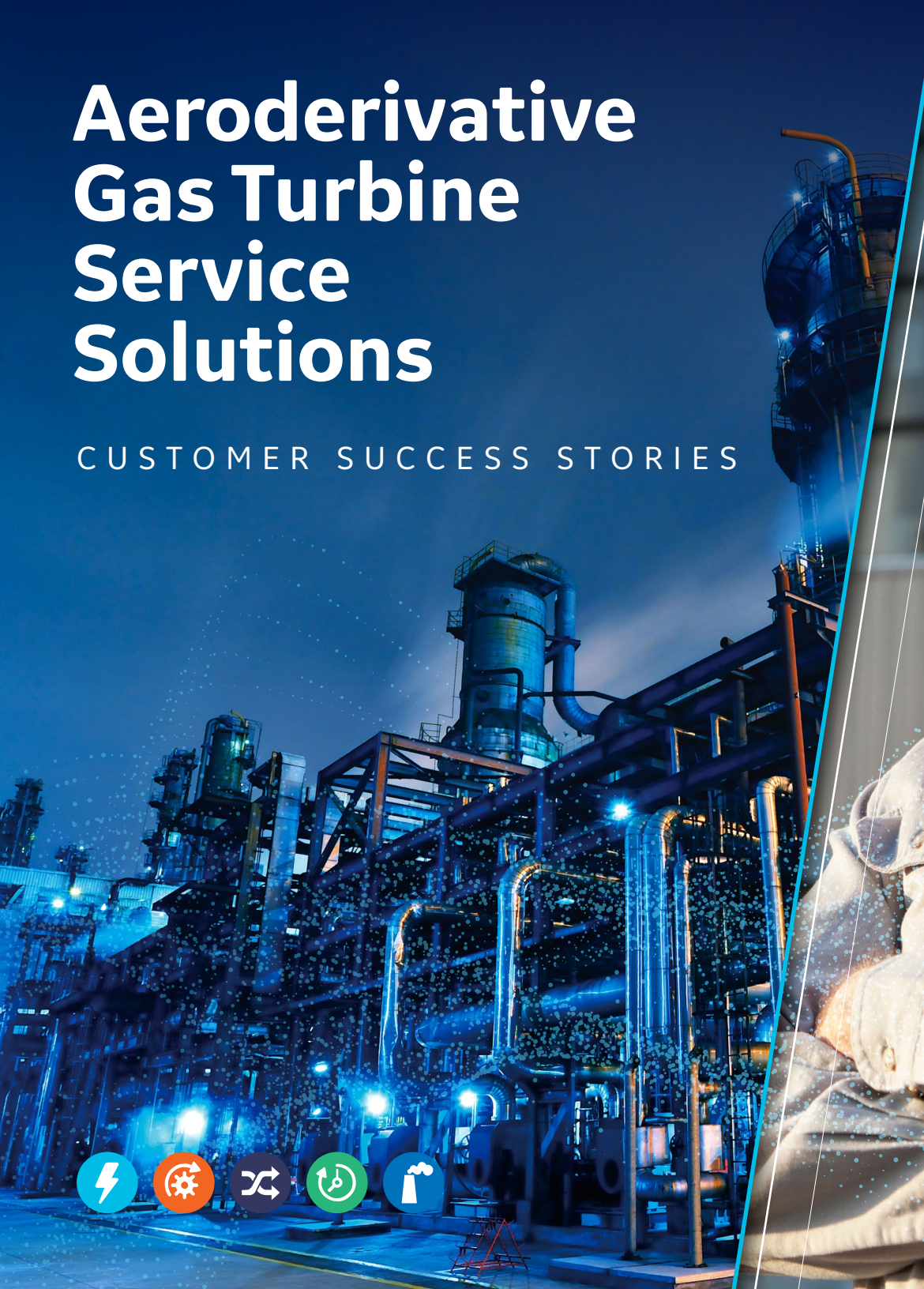
Aeroderivative Gas Turbine Service Solutions

CUSTOMER SUCCESS STORIES



ENTER

Discover what GE's suite of service solutions can do for your business through the success stories of customers like you.

Born from aviation technology, our aeroderivative gas turbines may not fly, but they can certainly travel. Our portfolio features highly flexible and mobile technologies for customized turbine solutions to a wide variety of applications, including utility generation, marine propulsion, district heating, grid stability, and mobile power.

Rely on the support of a single service provider with 40+ years of experience to understand the full impact of your installation as well as your aeroderivative gas turbine maintenance, repair, and upgrade activities at a plant level. GE's Power Services can meet your industry-specific requirements and provide reliable gas turbine services, whether they be for peaking power, flexible response to immediate grid demands or simply to keep your operation up and running at a proven 99% rate of reliability.

Power Services Outcomes

Output | Efficiency | Flexibility | Reliability/ Availability | Emissions Reduction

Grupo Losán Boosts Reliability and Efficiency with GE's Engine Exchange Program

Customer Need

Group Losán is a Spanish plank wood manufacturer that exports to more than 80 countries. Their commitment to sustainability drove their pledge to pioneering installation of cogeneration plants, using the heat from the combustion process to power their factories. At their site Talosa in Soria (Spain), Losán needed to increase the performance levels of their aeroderivative gas turbine LM2500 Base SAC.

Solution

Losán partnered with GE to adapt a maintenance solution in the form of an engine exchange - versus a standard major overhaul – to recover output and efficiency to the levels only a new engine can guarantee. This solution also reduces the outage duration from two weeks to one, and saves the cost of using a replacement engine during the repair - the LM2500 Base SAC engine was provided in just four days. The combination of GE's technology, program flexibility and expertise, allowed Losán to pursue the solution without impacting their own financing capacity.

Benefits

The gas turbine output will increase by 2% and the electrical efficiency (Lower Heating Value) by at least 1% versus the values achievable after performing a major overhaul on the existing engine. Thanks to the engine exchange solution, Talosa avoided shutting down twice, as well as the lease engine usage expenditure. Additionally, Losán will benefit from an operating lease structure, with no asset ownership on their balance sheet.

Country: **Spain**

2% output increase

1% electrical efficiency

NO expenditure on lease engine usage

Grupo **Losán**

Maintenance and Repairs Solution Cuts Aero Outage Time in Half

Customer Need

The largest independent Pacific power producer generates approximately one third of the peak power demand. Therefore, minimal operating downtime is a paramount priority for the company.

Solution

When the utility scheduled a major overhaul of a GE LM2500 aeroderivative gas turbine, it opted for a customized unit exchange solution. This option bypasses traditional repair processes while improving cycle times, cost-risk, and quality. During the outage period of this crucial engine repair, GE's Houston Service Center had to close for four days due to Hurricane Harvey. Despite this, the engine was repaired and shipped back to the customer site in just 51 days.

Benefits

A total of 26 days were shaved off the outage cycle, which allowed the power producer to benefit from a dramatic reduction in turnaround time. Additionally, GE offered a risk management model that allowed the company to plan for its project investment with certainty.

Country:
United States

Major overhaul in under 51 days

26-day reduction in outage cycle

Sniace Becomes Emissions-compliant, More Efficient, and More Economically Viable

Customer Need

Until 2013, the Combined Heat and Power (CHP) business in Spain was subsidized, at which point new legislation significantly reduced payments to CHP plant operators. Additionally, in 2015 new European legislation ruled on the deadlines to reduce environmental impact of large combustion plants. Sniace, a dissolving pulp and viscose fiber producer in Spain, was challenged to update two aeroderivative gas turbines to begin operating again competitively within this regulatory environment.

Solution

Sniace partnered with GE to give the sites the capabilities to restart operation after two years of being idle. GE collaborated with Cogen – an energy services company Sniace does business with – to repair and upgrade one of their units to comply with the new regulations. For Sniace's second unit, our services team offered a Dry Low Emissions (DLE) package and provided an LM6000PF gas turbine lease until 2025, allowing them to turn CAPEX into OPEX.

Benefits

GE's team helped the site extend maintenance intervals with a non-water injection solution and at the same time reduce emissions down to 15 ppm NOx, ensuring Sniace will be 100% emissions compliant. Additionally, an LM6000 PF aero engine leasing made the plant more economically viable, eliminating the need to use a gas boiler as the main source of heat for the site providing a more reliable and cost-effective solution to the process. The upgrade positioned Sniace to restart the viscose fiber plant before the end of 2017, which was crucial for their business plan.

Country: **Spain**

Reduced emissions to 15ppm NOx

Maintenance intervals extended

Sniace

Repowering JPS to Foster Energy Diversification in Jamaica

Customer Need

With half of Jamaica's electricity generation infrastructure more than 30 years old, the country is seeking ways to modernize its plants while boosting the country's fuel diversification. To this aim Jamaica Public Service Company, Limited (JPS), an electric utility company needed to upgrade their equipment at the dual-fuel Bogue Power Station in Montego Bay (Jamaica), to provide efficient and reliable power to their customers and businesses.

Solution

GE worked with JPS to repower a 19-year old unit with GE's advanced aeroderivative technology - LM2500+ aeroderivative gas turbine package. In addition to the unit, GE will provide associated installation services as well as inspection services to the existing Brush generator.

Benefits

Replacing JPS's old unit with GE's LM2500+ aeroderivative technology will enable the customer to increase output by 20 MW, which will positively impact service reliability on the island, and contribute up to 15% of JPS's total LNG-fueled generation.

20 MW
output increase

15% of JPS's total LNG-fueled generation enabled by GE's LM2500+ aero unit

JPS
Jamaica Public Service Company Limited
CHANGING LIVES WITH OUR ENERGY

Increasing Predictability through a Digital First in Europe

Customer Need

An Italian chemical company recently turned to GE to improve the reliability of its petrochemical plant. The facility produces detergents, liquid and powder soaps, and industrial lubricants. After experiencing a forced outage, the company needed to enhance its equipment, and improve its predictability for potential operational issues.

Solution

The plant opted for upgrading its LM2500+G4 aeroderivative gas turbine and generator with GE's Asset Performance Management (APM) Software. APM applies advanced data analytics to help predict and eliminate unplanned downtime and help improve power plant reliability. The APM installation on the customer's aeroderivative gas turbine is GE's first digital implementation of its kind in Europe.

Benefits

Through 24/7/365 monitoring of the aero machine, the petrochemical site is targeting to increase both its operational reliability and availability to 97%.

Country: **Italy**

Plant reliability and availability increased to 97%

Aeroderivative unit monitored 24/7/365

Aero Repowering Technology Helps Power Producer Benefit from State Subsidies

Customer Need

A state-owned power producer in Germany, which supplies a middle-sized city in Germany with electricity, natural gas, heat, and drinking water, needed better efficiency and more output on its existing aeroderivative LM25000+ gas turbines. Such upgrades would allow the utility to meet power demand and benefit from state subsidies.

Solution

Partnering with GE, the power producer repowered two aeroderivative units with flange-to-flange replacements of two LM2500+ gas turbines with G4 technology to slash emissions while driving more output and efficiency.

Benefits

Thanks to GE's repowering technology, the customer expects to increase output by up to 74 MW and efficiency by up to 0.4% while also qualifying for state subsidies. The site also benefited from shorter start-up times with the new technology.

Country: **Germany**

74 MW
output increase

The upgraded plant now qualifies for state subsidies

For more information visit our web page:

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