



Services to Power Your Plant's Full Lifetime Potential

Services Customer Success Stories

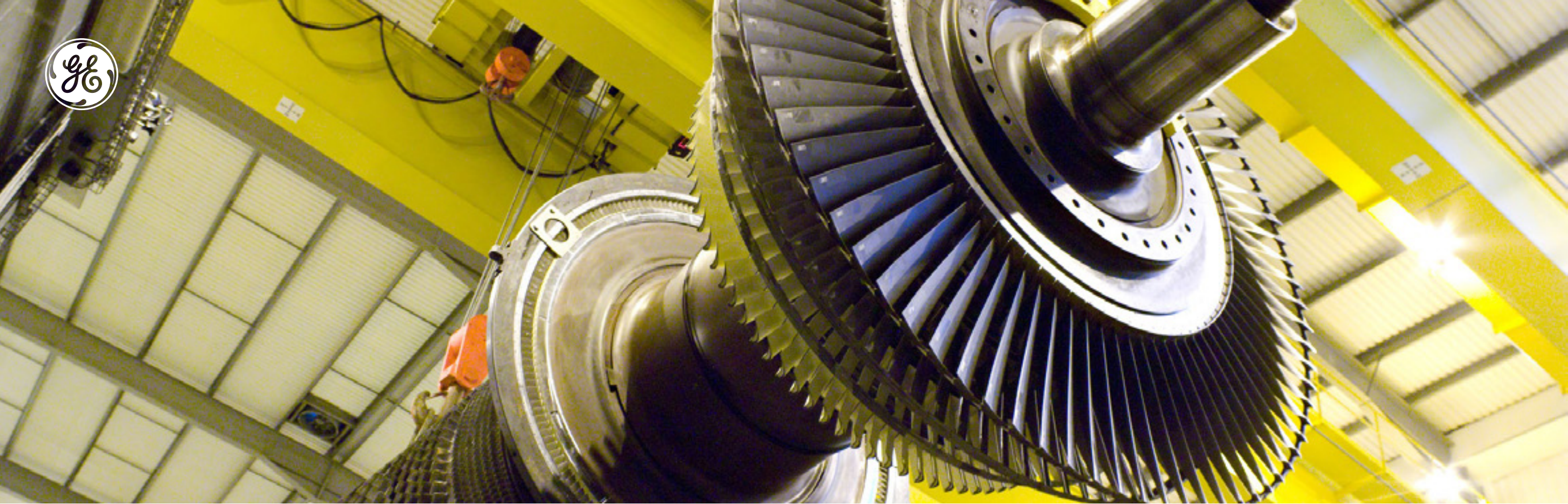
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OUR CUSTOMER COMMITMENT

Purpose-Driven Solutions Built to Power Your Plant's Full Lifetime Potential

At Gas Power, our mission is to drive customer success by working together to deliver cleaner, more accessible energy to the world. With a storied history of OEM expertise, and a dedication to continuous improvement, we're proud to offer our customers a full range of solutions—spanning from transactional services through long-term agreements to full on-site operational support—to help you power communities, industries, and livelihoods as we strive towards a future with less carbon emissions.

Putting this into practice, when we embark on a project, we work to deliver on three core values: **Purpose. Partnership. Power.**

Read on to explore the case studies and to see how we work alongside our customers to bring these core values to life.



“We always want to work with the most innovative and customer-focused OEMs and GE’s certainly given us that.”

-Steve Rigby, General Manager, Asset Management & Development, Origin Energy

REPOWERING AUSTRALIA

Working alongside Origin, GE proposed and implemented a repowering project to upgrade the existing infrastructure for an improved power generation outcome.

The Challenge

According to Clean Energy Council Reports from 2020, South Australia got more than half of its electricity from renewable sources in 2019, with the expectation to reach one hundred per cent by 2030. However, when the wind doesn’t blow, or the sun doesn’t shine, that left Southern Australia with a need for reliable and affordable power. To meet the demand, GE proposed a repower upgrade solution that could help ensure grid stability, along with the flexibility and speed to respond to the volatile power demand.

The Solution

Together, GE worked alongside Origin to successfully repower their South Australian Plant, Quarantine, by upgrading their existing plant infrastructure with the installation of a GE LM2500 aeroderivative gas turbine.

The Outcome

Now, Origin’s South Australian facility’s gas turbine can go from **zero to full output in five minutes**, whereas prior machinery took 20+ minutes. Once online, they can **ramp up and turndown between 20 to 50MW/minute**.

PURPOSE. PARTNERSHIP. POWER.

Purpose driven to deliver customer success through the ability to adapt to customer needs and deliver technology that offers efficient, reliable, and affordable electricity.

Collaborating to deliver on time, on budget, and on customer expectations through a relationship forged on trust, driven by innovation and transparency, and encompassed by safety.

Delivering power through a unit that is more flexible, more efficient, and better equipped able to deliver more capacity and produce an excellent power generation outcome.

KEY FACTS & FIGURES

Fleet: AERO / LM2500
Product: Repowering
Geo: Australia
Customer: Origin Energy

PROJECT TAKEAWAYS



Delivered Grid Stability



Flexible Power Solution



Power in as Little as 5 Minutes

SEE THE FULL CASE

Click [here](#) to watch the full case study.



“Working with GE was a great experience. Our series of rotor life extensions laid a solid foundation for our later upgrade work.”

-Enrique Serrano, El Bajío Power Plant Manager

PLANTING A SEED FOR THE FUTURE

GE Power assists with rotor life management and extension at El Bajío Power Plant.

The Challenge

In 2012, operators of the Saavi Energía El Bajío Power Plant in Mexico were facing a crossroads when evaluating the long-term plan for their combined-cycle plant. During the evaluation, plant operators realized a plant overhaul was required to support the growth and needs of the Bajío region long term.

The Solution

After analyzing different options, GE and the customer team decided to execute a mid-life **rejuvenation of their 7F gas turbines to nearly double the expected viable lifetime of their gas turbines** and thereby their power trains. **Pre-planning and early coordination with the GE team and the implementation of the seed rotor concept enabled the Bajío team to make the most of cycle times for parts manufacturing, improve outage labor efficiencies, and reduce overall cost.**

The Outcome

Today, the El Bajío plant continues to provide safe and reliable power to Mexico thanks in part to the efficiencies granted by the 7F rejuvenation. While the Bajío team debated the utilization of several partners, it was their coordination with GE that produced the desired outcome. Thanks to the success of past collaboration, the Bajío team selected GE for their 2020 incremental power plant supplementation.

PURPOSE. PARTNERSHIP. POWER.

Purpose driven to provide dependable power solutions for an enhanced customer experience through the implementation of the seed rotor concept to increase the efficiency of 7F gas turbines.

Collaborating to work three years ahead of a planned outage to ensure a long-term, viable, and safe solution to complete the mid-life rejuvenation.

Delivering power to extend the life of three power trains through a seed rotor that created a flexible, economical rejuvenation approach reducing outage risk, and enabling the operator to stay within the required outage window.

KEY FACTS & FIGURES

Fleet: 7F

Product: Upgrades—Rotor Life Extension

Geo: Mexico

Customer: Saavi Energía

PROJECT TAKEAWAYS



Nearly Doubled the Viable Life of the 7FA GTs and Power Trains



Increased Efficiency



Reduced Costs

EXPLORE THE FULL CASE

Click [here](#) to read the full case study.



“Plant by plant, we are investing in crucial technologies to improve our fleet’s performance. We have had great success at our Candela plant by using GE’s AGP technology, with a significant increase of output and efficiency, and now we are looking forward to the same benefits at our Torviscosa plant. GE is helping us to increase fuel savings, generation capacity, and, more importantly, our competitiveness in an evolving Italian energy segment.”

-Marco Stangaliano, Executive Vice President of Edison – Power Asset Division

BUILDING ON A LEGACY OF SUCCESS

After a successful upgrade in 2018, Edison again chooses GE technology—this time for their Torviscosa Power Plant.

The Background

In 2018, GE’s Advanced **Gas Path (AGP)** upgrade project was successfully executed at Edison’s Candela Combined Cycle Gas Turbine Power Plant, and exceeded customer expectations in terms of output and efficiency, with significant CO₂ reductions.

The Solution

In 2020, Edison again chose an AGP upgrade, this time for its Torviscosa plant in Italy’s Friuli region. GE’s 9F AGP portfolio is a collection of evolved and improved hot gas path upgrades that helps deliver industry-leading performance and operational flexibility, driven by increased output, efficiency, availability, and improved turndown. Working with GE, Torviscosa will benefit from the hardware upgrade to its existing two GE 9F gas turbines.

The Outcome

Through the upgrade, the Torviscosa Plant is on track to **increase the Plant’s output by more than 6%** and its **efficiency by approximately 1%**. AGP technology helps deliver operational flexibility with more output, efficiency and availability to gas plant operators on a global scale, both in mature industry segments—like the U.S. and Western Europe where efficiency and flexibility are crucial—as well as growing energy industry segments like MEA, Asia, China and Eastern Europe where more megawatts are needed for the grid and industrial use.

PURPOSE. PARTNERSHIP. POWER.

Purpose driven to provide dependable, innovative technological solutions that can deliver operational flexibility, more output, and increased efficiency.

Collaborating to strengthen a working relationship for successful upgrades for years to come.

Delivering power to increase output and efficiency, increase savings, and competitively position the customer for the future.

KEY FACTS & FIGURES

Fleet: 9F

Product: Upgrades—Advanced Gas Path (AGP)

Geo: Italy

Customer: EDF

PROJECT TAKEAWAYS



Increase Efficiency **up to 1%**



Increase **Output +6%**

EXPLORE THE FULL CASE

Click [here](#) to read the full case study.



To celebrate the 40th anniversary of their 6B gas turbine, GE debuted the world's first 6B repowering solution that will lead to increases in efficiency and output for a customer in Asia.

NEW UPGRADE TECHNOLOGY FOR INDUSTRY LEADING PERFORMANCE

Providing the world's first 6B gas turbine repowering solution for a chemical facility in Asia.

The Challenge

In an industry characterized by constant change and technological advances, an industrial chemical facility in Asia needed to find a way to improve production levels.

The Solution

To increase efficiency and output while reducing emissions, GE's new 6B repowering technology will be utilized on three 6B units. The units are expected to help the customer accelerate the rate of chemical production and could lead to significant fuel savings.

The Outcome

The repowering solution consists of a full "flange-to-flange" upgrade of all major components, including the combustion system, hot gas path and compressor, and transforms the 6B unit into a GE 6F.01 gas turbine, which is also available as a new unit.

PURPOSE. PARTNERSHIP. POWER.

Purpose driven to solve for customer issues, improve production levels, and increase efficiency and output while reducing emissions through the world's first 6B Repowering solution.

Collaborating to complete a full, "flange-to-flange" upgrade to improve production levels through careful listening and attention to customer needs and feedback.

Delivering power through the 6B upgrade, which incorporates advanced F-and-H-class technologies, helping to elevate the performance to industry-leading levels for its class.

KEY FACTS & FIGURES

Fleet: 6B
Product: Upgrades & Repower
Geo: Asia
Customer: Chemical Plant

PROJECT TAKEAWAYS



Output increase of **25% simple-cycle** and **35% combined-cycle**



NOx emissions reduction **as low as 15 ppm**



Efficiency improvement **up to 5 points**



Potential to save as much as~ **\$3.5 million in fuel a year for each 6B unit**



Extended maintenance intervals to **32,000 hours from 24,000 hours**

Extended major inspection intervals to **64,000 hours from 48,000 hours**

EXPLORE THE FULL CASE

Click [here](#) to read the full case study.



“Despite the challenges posed by the COVID-19 pandemic, GE succeeded in helping us improve our power generation capabilities, through its upgrades and maintenance solutions. We are pleased that the service interventions were executed on time to the highest standard of safety and quality, increasing the availability and overall reliability of our power plant.”

-Dr. Michael Mngodo, Songas Plant Manager

SECURING POWER AVAILABILITY IN A PANDEMIC

Successfully servicing four LM6000 aeroderivative gas turbines at the Songas Ubungo Power Plant in Dar es Salaam, Tanzania.

The Challenge

To work alongside the customer during peak COVID-19 pandemic times to support and deliver on customer needs and expectations by improving their power generation capabilities for their four LM6000 gas turbines **to aid nearly 12% of Tanzania’s population** who rely on this grid for power.

The Solution

To increase reliability, flexibility, and output, GE and engineers from FieldCore worked collaboratively with Songas and the Government to ensure careful adherence to the established COVID-19 site protocols to deliver a safe completion of the project for the plant and all those on site.

The Outcome

GE successfully **completed the service outage works on the four LM6000 aeroderivative gas turbines** on time, adhering to the highest standards of safety and quality, and **ensuring the continued supply of up to 150 MW of electricity to the national grid.**

PURPOSE. PARTNERSHIP. POWER.

Purpose driven to safely and securely deliver services to four LM6000 aeroderivative gas turbines and fulfill energy to the grid despite restrictions and challenges posed by COVID-19.

Collaborating to provide industry-leading technologies and advanced services that help power plant operators meet their needs, goals, and service their communities to fuel economic growth.

Delivering power through the success of the project to deliver up to 150MW of electricity from the units to the national grid through perspective maintenance, routine parts replacement, and enhancements to performance, reliability, efficiency, and flexibility.

KEY FACTS & FIGURES

Fleet: AERO / LM6000
Product: Outage & Field Service and Parts & Repairs
Geo: Tanzania
Customer: Songas

PROJECT TAKEAWAYS



Boosted Performance and Reliability



Increased Operational Efficiency



Increased Flexibility of Power to the Plant

SEE THE FULL CASE

Click [here](#) to watch the full case study.



“We were pleased to work with GE to enhance our Enfield plant’s competitiveness with the GT26 HE upgrade. Increasing efficiency and output, whilst lowering carbon emissions, operational, and maintenance costs, is crucial for the long-term success of our fleet.”

-Simon Balmer, Operations Director, Gas Turbine Fleet, Uniper

DELIVERING THE WORLD’S FIRST GT26 HE UPGRADE

Collaborating to deliver the largest innovation in GT26 technology since 1998 to successfully deliver increased output and efficiency

The Challenge

Uniper’s Enfield UK Power Plant was in need of a viable solution that could help keep them competitive today and in the future. Eager to seize this opportunity, Enfield needed a cutting-edge technological solution they could leverage to upgrade their gas turbine and maximize efficiencies for years to come.

The Solution

GE is committed to developing leading technologies to help our customers deliver cleaner, more accessible energy to the world. That’s why GE has been investing in the technological development and enhancement of GT26 gas turbine upgrades. The GT26 High Efficiency (HE) upgrade marks a historic moment for the GT26 fleet, serving as the largest technological advancement since the engine’s introduction in 1998. Blending F-and-H-Class technologies, this cutting-edge upgrade delivers unmatched reliability and availability with higher performance, while extending maintenance intervals across full load and cyclic operations on either a start or operating hours basis.

The Outcome

May 2021 marked the official completion of **the world’s first GT26 HE upgrade implementation**, delivering increased efficiency and output to Uniper’s Enfield combined-cycle power plant in the United Kingdom. Now, officially operating in its commercial capacity, Enfield’s GT26 unit provides substantially higher, dependable performance, and will serve as the fleet’s lighthouse, offering global GT26 users a long, profitable and cleaner future. Today, Enfield’s plant not only experiences increased efficiency, power, and flexibility, but is also able to generate power from a more competitive position thanks to increased life-cycle value and utilization, all while reducing CO₂ emissions per MWs.

PURPOSE. PARTNERSHIP. POWER.

Purpose driven to deliver global innovation through the world’s first ever gas turbine GT26 High Efficiency (HE) upgrade.

Collaborating to successfully undergo rigorous validation testing and bring this upgrade to marketplace for all GT26 fleet users around the globe.

Delivering power through the successful implementation of the GT26 HE upgrade to deliver the best of F-Class and H-Class technology for greater base-load efficiency and improvement, increased output, and reduced CO₂ emissions.

KEY FACTS & FIGURES

Fleet: **GT26**
 Product: Upgrade
 Geo: United Kingdom
 Customer: Uniper

PROJECT TAKEAWAYS

 **Efficiency Increase**

 **Maintenance Interval Extension**

 **Output Increase**

 **CO₂ Reduction**

EXPLORE THE FULL CASE

Click [here](#) to learn more about the GT26 High Efficiency upgrade.



KEY TAKEAWAYS & CORE OFFERINGS

In each of these cases, as with all our customers, we are proud to offer purpose-driven solutions built to power your plant's full lifetime potential. With a wide array of service offerings, we can help equip you with solutions that will solve for power needs of today, while preparing for a tomorrow with less carbon emissions.

Today, our reliability and efficiency solutions help ensure that our customers' assets can provide power to the grid when the grid demands it. Our services team can work with you to provide upgrades that can improve your plant's flexibility with faster ramp-up, better turn-down, or increased efficiency. And maintenance through our service team can help ensure that your power generating assets are in a competitive position to maximize life-cycle value and utilization.

Moving beyond our abilities to serve you today, we are committed to preparing you for a future with near-zero carbon power generation by combining pre-and post-combustion solutions, upgrading existing fuel systems for Hydrogen, and adding Carbon Capture systems. The power sector has a responsibility, and the technical capability, to take significant steps to quickly reduce greenhouse gas emissions.

We believe that renewables combined with gas power can quickly change the near-term trajectory for climate change and together, their complementary nature offers tremendous potential to address this major challenge with the speed and scale the world requires. And together, we can make this a reality.

And together, we'll build a world that works.

OUR SERVICE SOLUTIONS PORTFOLIO

To learn more about our unique solutions, please click the links below.

[Upgrades & Unit
'Flange To Flange' Replacements](#)

[Service Agreements](#)

[Parts And Repairs](#)

[Operations & Maintenance Services](#)

[Controls And Various Digital Solutions](#)

[Outage And Field Services](#)



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