

Independent gas
turbine solutions

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We are Uniper

We are a leading international energy company with operations in more than 40 countries and around 13,000 employees. We combine a balanced portfolio of modern assets with comprehensive technical and commercial expertise. Our assets and capabilities enable us to deliver bespoke, competitively priced energy products and services with agility, precision, and speed.

Uniper Energy Services – Your one-stop-shop solutions provider

We are an experienced international energy company with a new name. Uniper's know-how is based on a heritage of power industry expertise that dates back a hundred years. Our family tree includes some of the leading companies involved in energy generation and gas networks in Europe – businesses known for their reliability and technical excellence.

We deliver engineering, asset management and operation, energy sales, and technical solutions to optimize your commercial and technical performance in whichever market you operate.

We have the know-how to work with you to achieve full value from your existing assets. As your partners in energy, we are your independent advocate for new projects. We deliver solutions for future challenges. Our experience is comprehensive and covers not only gas turbines, but also heat recovery steam generators (HRSG), steam turbines, electrical systems/generators, C&I, civils, and all other balance of plant equipment.



Your benefits

Reduce CAPEX

By sharing our comprehensive engineering resources and operational experience, we help you to reduce costs and improve scheduling and quality control, right from the inception of your new build and upgrade projects.

Reduce OPEX

Optimize investment decisions and budget spend across each plant. Based on our broad operational experience, we can offer expert advice and an extensive range of operation, as well as maintenance services, up to full O&M contracting.

Improve performance

Improve your plant performance using our specialist engineering and risk services to establish the current condition of plant and identify improvement opportunities. Our risk management tool AERO establishes the current condition of your gas asset and identifies opportunities to improve performance.

Stay compliant

Ensure your plants remain compliant with changes in legislation whilst continuing to be profitable. We monitor norms, codes, and standards, and alert and consult you in case of changes. We have first-hand knowledge of the demands of environmental legislation.

Minimize downtime

Reduce or avoid downtime and plan targeted maintenance with our independent advanced condition monitoring system. We provide objective, OEM-independent early warning of disruptive component failures across the entire plant.

Optimize maintenance

As your reliable partner, we identify current operational performance benchmarks and how these can be developed. Our operational maturity assessment helps you to understand and develop current competence, leading to internationally recognized standards and optimized maintenance strategies.

Reduce replacement costs and gain OEM independence

Partnering with us gives you the opportunity to gain early warning of potential and developing component failure and ensure OEM modification or replacement at least cost, by receiving our expert advice on component issues.

Extend plant life

Establish the life of components, challenge unnecessary replacement, and choose OEM-independent repair options with our systematic reviews of asset condition.

Optimize fuel supply and energy sales

Partnering with us, you will benefit from our fuel and energy trading competence to help you optimize fuel procurement and supply, as well as energy sales and trading.



One-stop-shop OEM independence

Comprehensive skills from a single source reduces complexity and risk

We take a holistic approach to your needs, acting cohesively and in a multi-disciplinary way to respond quickly and solve your problems. Our teams work hand-in-hand to proactively prevent issues in the future and reduce complexity.

Based on our experience in operating and continually optimizing a large portfolio of gas assets, we add value to the construction of new generation capacity worldwide. A large number of new-build projects in Europe, Russia, and Brazil have extended our comprehensive know-how and expertise.

We are amongst the largest gas traders in Europe and globally, with extensive market and trading experience in all commodities relevant for the power industry. We provide expert advice on fuel sourcing and energy sales strategies.

We leverage our experience and independence of original equipment and component suppliers (OEMs) to choose the best solution. This provides an alternative to long-term service agreements and allows you to credibly challenge OEM strategies.

Maximizing value across the entire asset life cycle

Through-life Services

Our focus is to add value at all life-cycle stages of your asset. By combining our through-life solutions with our expert specialized services, we provide you with a unique value proposition. As owner's engineer we play a critical role supporting and supplementing your resources, acting as your independent advocate. We provide technical advice from inception of your new project until the end of the asset life. We ensure compliance, and minimize your exposure to risk with technical and environmental codes and standards, whilst our energy trading and gas supply services help to maximize your return on investment.

Feasibility, Construction, Commissioning

Use our experience in project development and construction to make the most of your new assets. From the earliest project phases until commissioning of your new gas plant, we provide specialist technical advice. We support all planning, permitting, and construction activities, as owner's engineer or project managers or by providing specific services such as inspections.

Operation & Maintenance

Our combined O&M service brings together everything required for your gas plant, delivering best commercial value and minimizing operational risks. We identify potential problems before they develop into failures. Our outage management and related services optimize plant downtime and value for money.

Asset Management & Optimization

Identify how performance can be optimized with our technical review of assets and asset management services. We help to adapt the running regimes of your gas assets to changing market conditions. This can include life extension of critical components and alternatives to OEM options, for example by modifying gas or steam turbine blades for higher capacity and output.

Decommissioning

We have first-hand experience managing the end-of-life options of gas plants. We maximize the value of your assets and ensure high levels of safety and compliance at all times, from preservation of gas plant with a shortened return to service time, to fully mothballed and eventual complete site remediation.

Our Energy Services in detail

Through-life Services

- Owner's engineering services
- Project management
- GT OEM-independent consultancy
- Operational maturity assessment
- Continuous improvement solutions
- Commercial analysis solutions
- Technical consultancy
- Supplier quality services
- Environmental compliance and management
- Health and safety management
- Stakeholder engagement
- Training and development

Challenging OEM



Supporting an outage at a Spanish CCGT plant, we inspected and rejected parts supplied by the OEM. Following our investigation, the OEM agreed to replace them with new, acceptable parts, avoiding a potential failure and thus maintaining availability. €216,000 in replacement costs were avoided in addition to a potential €500,000 capacity penalty.

Optimized maintenance strategy developed



Our client had significant new-built assets designed to run base load. Its maintenance strategy involved high technology and OEM dependence. Changes in the market and reduction in CCGT profitability demanded a review of maintenance spend. We leveraged our capabilities to develop a coherent long-term strategy taking into account different factors for each asset.

Feasibility, Construction, Commissioning

- Business case assessment
- Conceptual and basic design (FEED)
- Feasibility studies
- Environmental impact assessment
- Survey, audits, and peer reviews
- Due diligence
- Governance and compliance
- Technical design
- Planning permitting and impact assessment
- Project and site management
- Environmental compliance and governance
- Tendering and procurement support
- Quality assurance
- Commissioning
- Risk management
- Inspections
- Claim and variation management

Building new gas plants



We have provided owner's engineering, project management, and cutting-edge consultancy services for new CHPs and CCGTs up to 1,248 MW capacity in different countries like Germany, UK, Spain, Slovakia, and Hungary. These included a state-of-the-art CCGT single-shaft asset achieving 60.4% efficiency. While our clients focused on their core business, we used proven skills and experience to take care of the projects. Ask us for specific references.



Operation & Maintenance

- Operations and maintenance expertise and delivery
- Gas turbine expertise to challenge OEMs
- Plant performance optimization
- Increasing plant flexibility, for example shortening start-up times, reducing minimum load
- Condition monitoring, for example vibration, combustion, emissions, performance
- Problem diagnosis
- Maintenance management and optimization
- Outage management
- Inspection management and analysis
- Workshop and field services
- Spare parts management

Major failure avoided

Our UK client asked us to visually inspect and flow test their new hot gas path components. Our investigations revealed non-authorized weld repairs which risked major turbine failure. Following our recommendations, the OEM agreed to replace nine blades and so the €2.6m cost of turbine failure was avoided.

Repairs and downtime saved

Our client had a transformer failure at its UK plant. We gave an insight into the cause and damage and assessed components at risk. We confirmed suitability of spares and oversaw recommissioning. With our support, our client saved €1.23m in repair costs and downtime.

Reduced OPEX

Our client assigned us with the inspection of its Russian plant. The inspection revealed cracks on the second-stage nozzles and problems with shaft line bearings. We persuaded the OEM to change both stages and ensure machine integrity over the crucial winter period. The operator saved €6m in OPEX and €5.32m loss in availability by avoiding unplanned outage.

Asset Management & Optimization

- Operation and maintenance strategies
- Long-term service agreement consultancy services
- Advanced condition monitoring
- Risk management
- Process safety and engineering
- Plant modeling
- Flexibility studies
- Operational maturity assessment
- Modifications, upgrades, and innovation
- Life extension – gas turbine and parts
- Benchmarking studies
- Governance and standards
- Fuel supply

Renegotiation of long-term service agreements

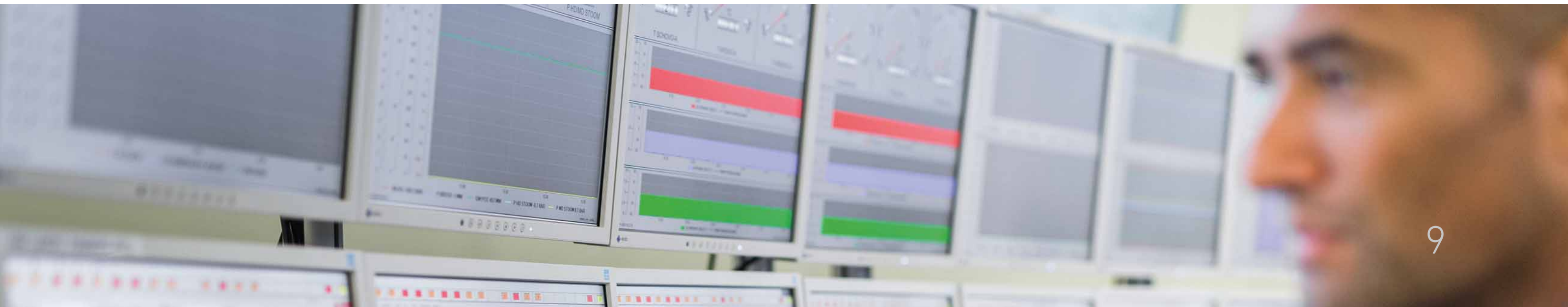
We have managed and renegotiated a wide variety of long-term service agreements (LTSAs) for a CCGT portfolio of circa 20 GW, consisting of gas turbines from all major OEMs. Market conditions change over time. LTSAs with OEMs typically have a long duration and require continuous adaptation to extract the same or increased value. Leverage our OEM independence and experience with LTSA renegotiations to improve your LTSA terms.

Increased capacity

Our client sought to increase the capacity and efficiency of a 1,400 MW plant in the UK. We recommended and managed the retrofit of last-row turbine blades on the plant's four units. This delivered a 7 MW increase in capacity and a three percent improvement in efficiency, in total worth €6.3m increased revenue over the plant lifetime.

Increased flexibility and efficiency

Our client wanted to gain higher levels of flexibility and efficiency. We worked with the gas turbine equipment manufacturer to implement the variable load path gas turbine control modifications. We carried out plant modeling, HRSG, steam turbine and balance of plant impact assessments, risk mitigation measures (including HAZOP), and field testing to support the successful upgrade. Through our support our client achieved a significant reduction in start time and fuel cost.



Decommissioning

- Planning permitting and impact assessment
- Decommissioning strategy
- Managed shutdown
- Mothballing
- Return to service strategies
- Dismantling
- Site and safety management

Conversion to OCGT returns plant to profitability



To support our UK client in responding to new market opportunities, we successfully converted their fully mothballed CCGT to OCGT operation. The partial demolition phase was completed on an EPCM basis and included removal of chimneys and cooling water towers. The project included full inspection of OCGT components and changes to control systems. The conversion, as planned and executed by us, drastically reduced the cost base for the site and paid back within one year of operation.

Energy Services

Contact us for a reference list of projects
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Uniper Kraftwerke GmbH
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April 2017