



ERRIGAL ENERGY

PETROLEUM AND ENERGY SERVICES

www.errigalenergy.com



COMPANY INTRODUCTION

Errigal Energy is an Irish owned company providing Technical Expertise to the Petroleum and Energy sectors. The company was founded in 2007 by a team of ex OEM qualified and experienced engineers with a vision to offer a world class quality service to owners and operators of Power Plants and Oil Facilities globally. Our team of highly skilled personnel, with a solid background and knowledge base, has been providing Engineering and Technical solutions to companies engaged in the Oil and Energy sectors globally. We can provide a wide range of services in some of the most challenging environments throughout the world. The companies head office is based in Ireland with a branch office in Turkey and our aim is to open additional offices in the near future to serve our clients in the Middle East and North Africa regions.

We have been involved in the installation and commissioning of more than 6000MW in Iraq alone under contracts to global companies like ABB, Calik and MASS Group Holding and we have carried out or been involved in excess of 80 outages all of which were completed successfully and ahead of schedule.

We pride ourselves in our ability to offer an uncompromised Service to our customers when they need it most. Our team of highly skilled personnel can provide Engineering and Technical solutions to leading clients engaged in all aspects of the industry globally. We have the experience of working in the most remote and challenging locations in the world and we continually seek new opportunities. Depending on our clients' specific requirements, we can customise our solutions to accommodate their needs for any task, big or small. We would like our clients to experience first-hand the benefits we can offer and our competitiveness in the market.

Our services include, but not limited to, Erection, Commissioning, Operations, Maintenance, Remote Monitoring Services, Plant Assessment Management etc. We are capable to take care of all of our clients needs, perform routine Maintenance, upgrade their equipment or support them in their quest for engineering excellence and maximise equipment availability through Long Term Service Agreement or Operation and Maintenance agreements.

As Errigal Energy we aim to satisfy our clients' requirements in an economically viable and justifiable manner. We take the time to listen to our customers, understand their needs and requirements in an attentive approach that always exceed their expectation.

Over the years we have gathered extensive experience in the Electrical, Mechanical, Controls, Excitation and Protection sectors during major equipment installations, technology retrofits, upgrades and conversions on turbines and turbines-driven equipment (Generators, Compressors etc) together with balance of plant. Our ability to quickly develop a solution and promptly integrate the resources and suppliers gives us unsurpassed capacity to readily generate quality turnkey solutions.



إرغال للطاقة هي شركة إيرلندية تقدم خدمات فنية لقطاعي البترول والطاقة. تأسست الشركة في عام 2007 من قبل فريق من المهندسين المؤهلين وذوي الخبرة الذين كانوا يعملون سابقًا في شركات صانعي المعدات والماكينات الأصلية (OEM) بهدف تقديم خدمات ذات جودة عالمية لأصحاب ومشغلي محطات الطاقة والمنشآت النفطية في كل أنحاء العالم.

دأب فريقنا المكون من موظفين ذوي مهارات عالية، الذين يتمتعون بخلفية معرفية قوية للحلول الهندسية والتقنية للشركات العاملة في قطاعي النفط والطاقة على مستوى العالم. يمكننا تقديم مجموعة واسعة من الخدمات في بعض البيئات الأكثر تحديًا في العالم. يقع المكتب الرئيسي للشركة في أيرلندا ويوجد لها مكتب فرعي في تركيا ونهدف لفتح مكاتب إضافية في المستقبل القريب لخدمة عملائنا في منطقة الشرق الأوسط وشمال أفريقيا.

لقد شاركنا في تركيب وتشغيل أكثر من 6000 ميغاوات في العراق وحدها بموجب عقود تحت شركات عالمية مثل ABB و Calik و MASS Group Holding وقمنا بعمل -أو شاركنا في- أكثر من 80 صيانة شاملة تم استكمالها جميعًا بنجاح في فترات أقصر من الجدول الزمني الموضوع.

نحن نفخر بقدرتنا على تقديم خدمة لا تضاهي لعملائنا عندما يحتاجون إليها بصورة عاجلة وملحة. يمكن لفريقنا من الموظفين ذوي المهارات العالية توفير الحلول الهندسية والتقنية للعملاء الراندين العاملين في جميع جوانب الصناعة على مستوى العالم.

لدينا خبرة في العمل في أكثر المناطق النائية والصعبة في العالم، ونبحث باستمرار عن فرص جديدة. وفقًا لمتطلبات عملائنا المحددة، يمكننا تقديم حلولنا المميزة لتلبية احتياجاتهم لأي مهمة، كبيرة كانت أم صغيرة. دائمًا ما نود أن يجرب عملاؤنا الفوائد المباشرة التي يمكن أن نقدمها في ضوء قدرتنا التنافسية في السوق.

تشمل خدماتنا، على سبيل المثال لا الحصر، التشييد، إختبارات جاهزية التشغيل، التشغيل التجريبي، العمليات والصيانة وخدمات المراقبة عن بُعد وإدارة تقييم المصنع، إلخ.

لدينا القدرة على تلبية جميع احتياجات عملائنا، وإجراء الصيانة الروتينية، أو ترقية وترفع معداتهم أو دعمهم في سعيهم للتميز الهندسي وزيادة توافر المعدات إلى أقصى حد من خلال اتفاقية الخدمة الطويلة الأجل أو اتفاقيات التشغيل والصيانة.

نحن في إرغال للطاقة نهدف إلى رضا عملائنا وتلبية متطلباتهم بطريق اقتصادية وبنهج مبرر. نأخذ الوقت الكافي للاستماع إلى عملائنا، ونسعى لفهم احتياجاتهم ومتطلباتهم باهتمام يفوق توقعاتهم.

على مر السنين تراكمت لدينا خبرات واسعة في القطاعات الكهربائية والميكانيكية والتحكم والإثارة والحماية خلال أنشطة تركيب الماكينات والمعدات الكبيرة، التحديثات التكنولوجية، الترفيعات والتعديلات على التوربينات والمعدات التي تديرها التوربينات (المولدات، الضواغط وغيرها) جنبًا إلى جنب الملحقات والمعدات الإضافية.

إن قدرتنا على تطوير حل سريع، إستغلال الموارد والتنسيق مع الموردين على الفور يمنحنا قدرة غير مسبوقة لتقديم حلول جاهزة متكاملة ذات جودة على وجه السرعة.





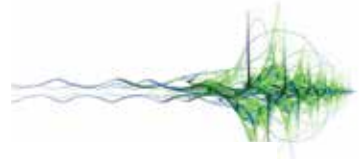
VISION

To be a globally preferred, credible and trust worthy partner of choice in the Energy & Petroleum services.

MISSION

To achieve the company Vision and build the required accreditation, reputation and trust, the Company adopts a strict code of Ethics and Business Principals to make sure that it is adding values to its stakeholders, partners and affiliates.





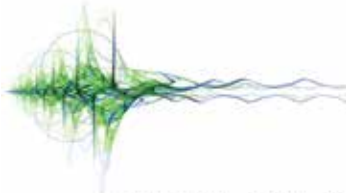
رؤية الشركة:

أن نكون شريكًا عالميًا وخيار مفضل، يعتمد عليه، وذو مصداقية في خدمات الطاقة والنفط.

رسالة الشركة:

لتحقيق رؤية الشركة وبناء الثقة والسمعة والثقة اللازمين ، تتبع الشركة مبادئ وقواعد أخلاقية صارمة للتأكد من أنها تشكل إضافات وفوائد للملاك، والشركاء والشركات التابعة له والجهات المتعاونة معها.



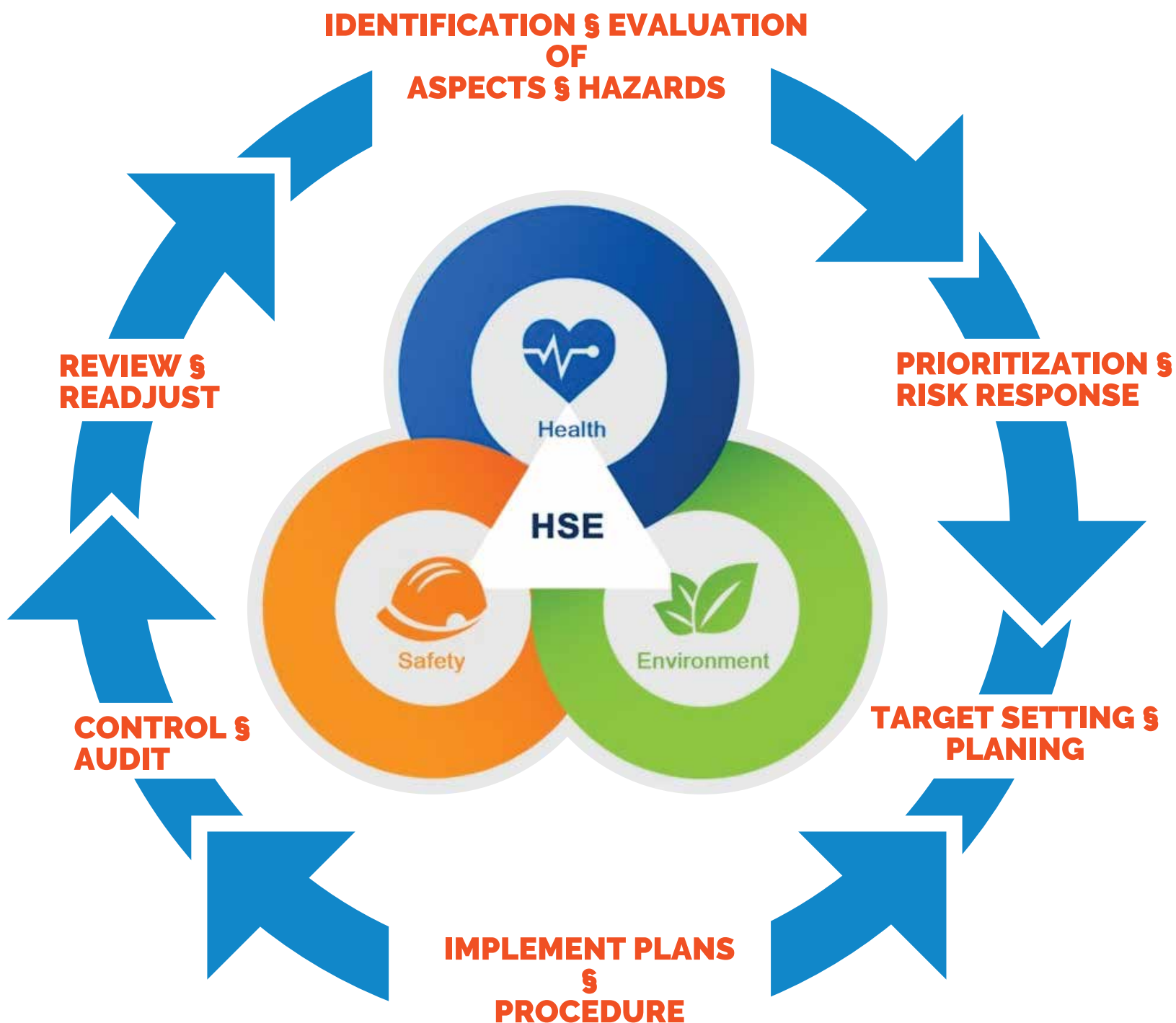


HEALTH SAFETY ENVIRONMENT

Health Safety and the Environment are at the forefront in terms of importance in everything we do on a day to day basis and this is why our management system has been developed to provide a structure by which the Company can effectively manage the HSE issues related to our very diverse range of activities. The philosophy is that HSE considerations should be integrated into the day-to-day work activities of the Company, so that good HSE management becomes a normal, accepted part of our daily work ethic.

The HSE management system has been prepared in accordance with leading, international principles and practices for the HSE management of power plants, including best industry practices and the requirements specified for an HSE management system under ISO14001 and OHSAS/ISO18001, which are the reference documents from the International Standards Organization for environmental management and health and safety management respectively.

Therefore, the HSE management system we have in operation is capable of being certified to the requirements of ISO14001/OHSAS/ISO18001 as desired.



الصحة والسلامة والبيئة

تتصدر الصحة والسلامة والبيئة الأهمية في كل ما نقوم به على أساس يومي، ولهذا السبب نظامنا الإداري تم تطويره بطريقة تمكن الشركة من إدارة قضايا الصحة والسلامة والبيئة المتعلقة بفعاليتنا وأنشطتنا المتنوعة. تنبني فلسفتنا على دمج اعتبارات الصحة والسلامة في أنشطة العمل اليومية للشركة، بحيث تصبح إدارة الصحة والسلامة الجيدة جزءًا طبيعيًا ومقبولًا من أخلاقيات العمل اليومية.

تم إعداد نظام إدارة الصحة والسلامة والبيئة وفقًا للمبادئ والممارسات الدولية الرائدة لإدارة الصحة والسلامة والبيئة في محطات توليد الطاقة، بما في ذلك أفضل الممارسات الصناعية والمتطلبات المحددة لنظام إدارة الصحة والسلامة والبيئة بموجب ISO14001 و OHSAS / ISO18001، وهي الوثائق المرجعية من منظمة المعايير الدولية للإدارة البيئية وإدارة الصحة والسلامة على التوالي. لذلك، فإن نظام إدارة الصحة والسلامة والبيئة لدينا في العملية قادر على أن يكون معتمدًا لمتطلبات ISO14001/OHSAS/ISO18001 كما هو مطلوب.





POWER GENERATION

Power Generation Services have been at the heart of our business since our existence, established and developed by our experienced field and support team working directly with some of the world's leading OEM's. We are sharing that experience in offering our customers a world class service in all aspects of the Power Industry at a competitive and affordable cost. As an Independent Service Provider, we eliminate the need for any third-party intervention giving customers and clients the benefit of a single point of service structured to suit their specific requirements at any given time. Our newly introduced approach is the involvement in Independent Power Plants (IPP) investments, where long term Power Purchase Agreements (PPA) and its requirements. We carry out these investments jointly with reputable and financially capable partners in various and challenging geographical locations.



تعد خدمات توليد الطاقة من صميم أعمال شركتنا منذ الإنشاء، حيث تم تأسيسها وتطويرها من قبل فريق الدعم الفني والخبراء لدينا الذين كانوا يعملون مباشرة مع بعض الشركات الأم المصنعة للمعدات في العالم. نقوم بتقديم تلك الخبرات لعملائنا من خلال خدمات عالمية المستوى في جميع جوانب صناعة الطاقة بتكلفة تنافسية وبأسعار معقولة. بصفتنا مقدم خدمة مستقل، فإننا نسبتعد الحاجة إلى أي تدخل من أطراف أخرى بمنح عملائنا ميزة الخدمات المتكاملة من مصدر موحد بصورة تناسب متطلباتهم المحددة في أي وقت محدد. مؤخرًا ولجت الشركة مجال تقديم خدمات وعروض المشاركة في استثمارات محطات توليد الطاقة المستقلة (IPP)، عندما تكون هنالك اتفاقيات شراء الطاقة طويلة الأجل (PPA) ومتطلباتها. لدينا القدرة ونقوم بتنفيذ هذه الاستثمارات بالاشتراك مع شركاء يتمتعون بسمعة طيبة ووذى مقدرة مالية في مواقع جغرافية مختلفة وصعبة.





OIL AND GAS

Errigal Energy has considerable expertise in the oil and gas industries. The company's capabilities, together with its partners, include the following areas:

- Exploitation plans and strategies for small Oil and Gas discoveries and remote fields, with more focus towards effective power generation solutions using these stranded or uneconomical discoveries.
- Procurement and supplies of Petroleum Equipment.
- Training and Competency Development of National Staff.
- Fuel treatment and conditioning systems for various industry applications.
- Small refineries and topping plants EPCC.



- تتمتع إرقال للطاقة بخبرات مقدره في صناعات النفط والغاز حيث تشمل قدرات الشركة، بالتعاون مع شركائها الآخرين، المجالات التالية:
- خطط واستراتيجيات استغلال إكتشافات النفط والغاز الصغيرة والحقول النائية، مع التركيز بشكل أكبر على حلول فعالة لتوليد الطاقة باستخدام هذه الإكتشافات النائية أو غير الاقتصادية.
 - المشتريات والإمدادات للمعدات البترولية.
 - تدريب وتنمية قدرات الموظفين الوطنيين.
 - أنظمة معالجة وتكييف الوقود للعديد من التطبيقات الصناعية.
 - تصميم وتوريد وتركيب وتشغيل مصافي النفط الصغيرة.





RENEWABLE AND INNOVATIVE SOLUTIONS

Errigal Energy, in collaboration with reputable partners, is capable to provide innovative solutions and technologies in the following areas:

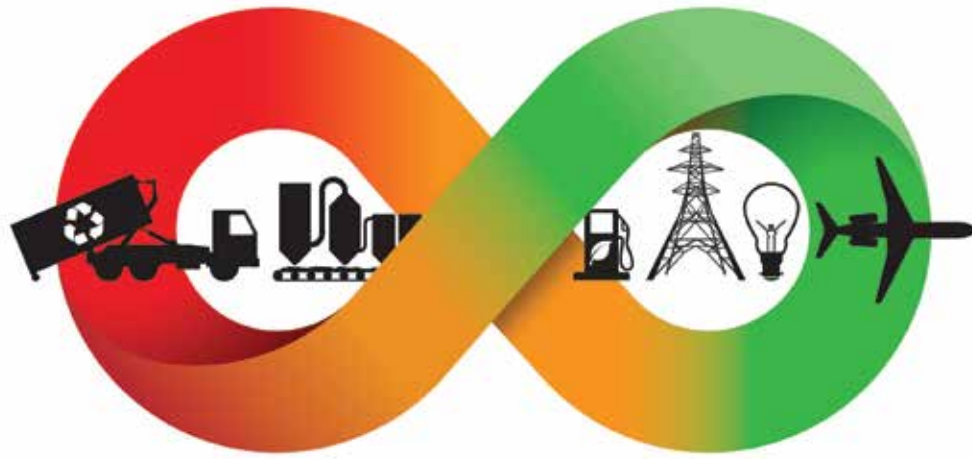
- Solar power systems of various scales.
- Wind power solutions.
- Smart Hydropower solutions.
- Energy management systems.
- Hybrid systems for smart and cost effective energy utilization.
- Waste to Energy solutions.



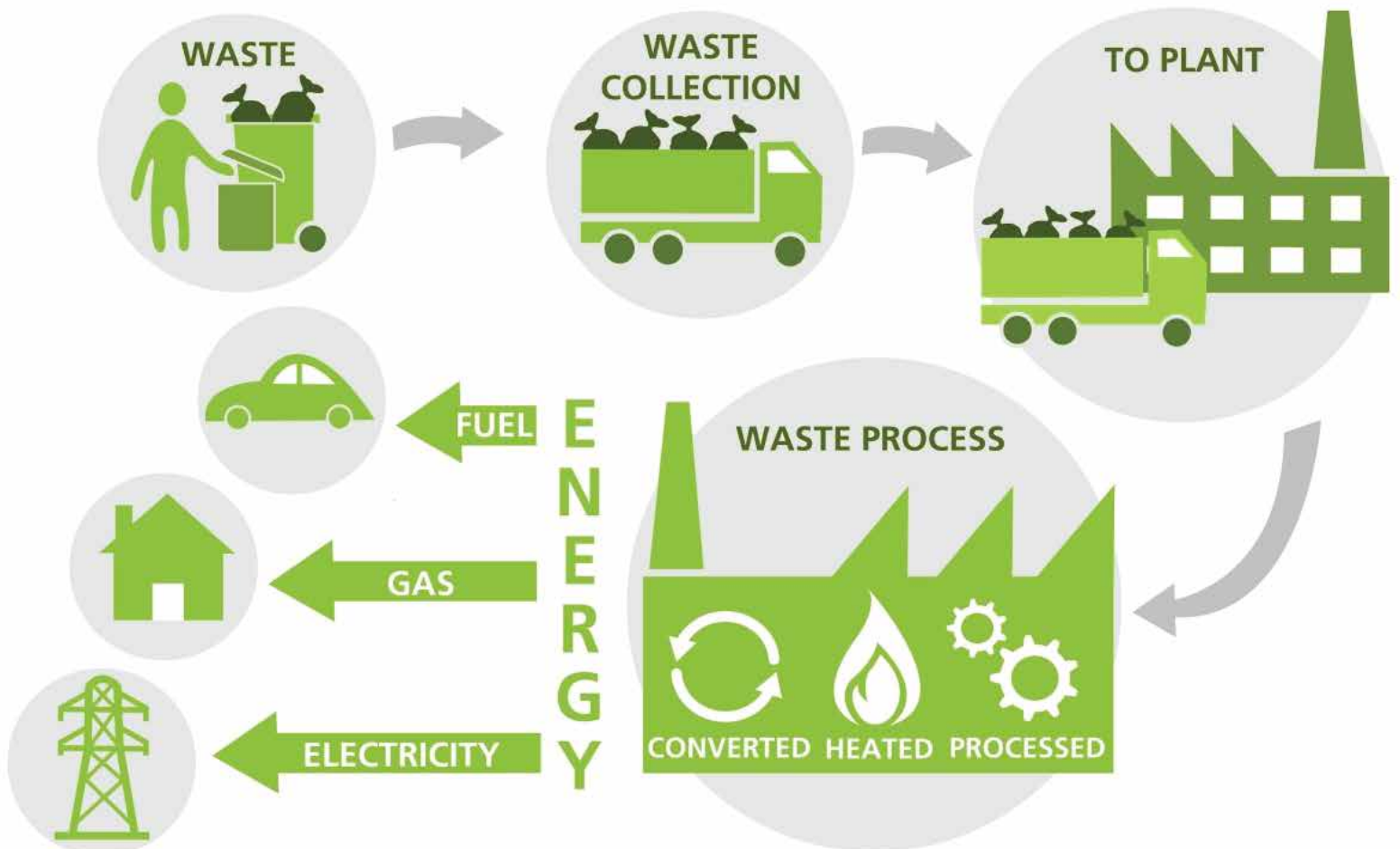
الطاقات المتجددة والحلول المبتكرة

إرقال للطاقة، بالتعاون مع شركاء مرموقين ، قادرة على تقديم حلول وتقنيات مبتكرة في المجالات التالية:

- أنظمة الطاقة الشمسية على مستويات مختلفة.
- حلول طاقة الرياح.
- حلول الطاقة الكهرومائية الذكية.
- نظم إدارة الطاقة.
- الأنظمة الهجينة لاستغلال أمثل وفعال للطاقة.
- تحويل النفايات والمخلفات إلى طاقة.



ENERGY FROM WASTE

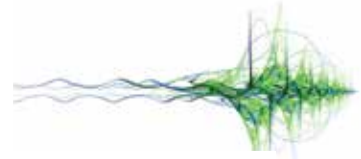




SERVICES

- EPC (Engineering, Procurement, Construction)
- Project Management.
- Relocations
- Construction/Erection.
- Commissioning
- Operations and Maintenance
- Overhauls
- Spare parts and Consumables
- Technical Advisory Services
- Supervision and Craft labor
- Plant assessments/Due Diligence
- Consultancy services
- Heavy Electrical Equipment Testing

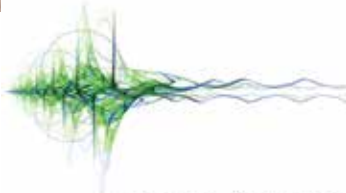




الخدمات التقنية

- الهندسة ، التوريد ، التشييد (EPC)
- ادارة المشاريع.
- إعادة التوطين (نقل المحطات والمصانع من مكان لآخر)
- البناء / التشييد.
- اختبارات جاهزية التشغيل / التشغيل التجريبي
- عمليات التشغيل والصيانة
- الإصلاحات والصيانات الشاملة
- قطع الغيار والمستهلكات
- الخدمات الاستشارية الفنية
- الإشراف والعمالة الإحترافية
- تقييم حالة المصانع والمعدات / التقصي والتحري
- خدمات استشارية
- اختبارات المعدات الكهربائية الثقيلة





EPC (ENGINEERING, PROCUREMENT, CONSTRUCTION)

Considering the immense diversity and vast experience of our key personnel and their exposure to such contracts, managing and executing many large scale EPC contracts for many multi national corporations up to the value of 1 billion USD, Errigal Energy is capable to bring all this expertise together to offer our clients and customers a complete turnkey package for any kind of Petroleum and Energy requirement. We have teamed with some keen investors who will be more than happy to consider genuine business opportunities.





الهندسة ، التوريد ، التشييد (EPC)

بالنظر إلى التنوع الهائل والخبرة الواسعة لطاقتنا الفني الأساسي وتعاملهم مع هذه العقود من قبل، إدارة وتنفيذ العديد من عقود EPC الكبيرة للعديد من الشركات متعددة الجنسيات التي تصل قيمتها إلى مليار دولار أمريكي، فإن إرقال للطاقة قادرة على جمع كل هذه الخبرات معاً لنقدم لعملائنا باقة متكاملة جاهزة لأي نوع من متطلبات البترول والطاقة، ولقد بدأنا التعاون مع بعض المستثمرين الجادين والمقتدرين الذين سيكونون أكثر من سعداء لدراسة والولوج في أي فرص عمل حقيقية.





PROJECT MANAGEMENT

Errigal Energy staff has a wealth of experience in Project Management in all areas of Petroleum and Energy projects. With our collective and extensive experience in project management, we can offer our clients valued service in all aspects of the industry from scopes as simple as a small retrofit or upgrade project to scopes as large as a billion dollar EPC project. As a result, we can help our clients reduce technical risks, prevent errors, control budgets and effectively keep their project within the planned schedule. Moreover, we can help our clients meet all applicable requirements, whether they are regulatory, voluntary or client based.



لدى إيرقال كم مقدر من الخبرة في كافة مجالات إدارة المشاريع في مجال مشاريع الطاقة والنفط. باعتبار خبراتنا المتراكمة والثرة في مجال إدارة المشاريع، نستطيع أن نقدم لعملائنا خدمة مميزة في كافة المجالات تبدأ من مراجعات صغيرة إلى مجالات كبيرة تصل إلى أكبر من مليار دولار كمشروعات الهندسة والمشتريات والتشييد المتكاملة. كمحصلة، يمكننا مساعدة عملائنا لتخفيض المخاطر الفنية، منع الأخطاء، التحكم في الميزانيات والحفاظ على تنفيذ المشروع بصورة فعالة حسب الجدول الزمني الموضوع. أيضا، يمكننا مساعدة عملائنا للإيفاء بالمتطلبات المفروضة عليهم سواء كانت متطلبات رسمية أو طوعية.





RELOCATIONS

Plant relocation is the process of decommissioning a certain plant at a given location, dismantle it, transport to another location where it is desired to be erected and commissioned again.

Plant relocation is a major task that requires to be handled in great care and professionalism. It needs to be planned in a very detailed way and robust procedures and QA/QC systems shall be in place. Errigal Energy and our partners are capable to perform any challenging task related to industrial facilities relocation.

Furthermore, based on the current strategy of many countries around the world to rely more on renewable resources, Errigal has embarked on a serious business stream of acquiring power plants of various sizes, carrying out complete rejuvenation and revamping, and then erecting these plants as an investor where feasible PPA and the related legal terms are acceptable.



نقل المنشآت الصناعية

نقل وتحويل المنشآت الصناعية هي عملية إيقاف هذه المنشأة في مكان جغرافي معين، تفكيك المنشأة، نقلها إلى مكان آخر حيث يراد تركيبها وتشغيلها مرة أخرى.

نقل وتحويل المنشآت الصناعية هي عملية كبيرة تحتاج أن يتم تنفيذها بقدر كبير من الحذر والإحترافية. تحتاج أن يتم التخطيط لها بطريقة مفصلة وأن تكون هنالك إجراءات سليمة في مجال تحقيق الجودة والتحكم فيها.

إيرقال للطاقة بالتعاون مع شركائها لديهم القدرة لتنفيذ أي عملية صعبة ومعقدة لتحويل أي منشأة صناعية. بالإضافة إلى ذلك، وبناء على الاستراتيجية الحالية للعديد من الدول حول العالم للإعتماد على أنظمة الطاقة المتجددة، شرعت إيرقال للطاقة في الدخول مجال واعد وهو شراء محطات طاقة مستعملة بسعات مختلفة، صيانتها وتحديثها بصورة كاملة، ومن ثم تركيبها كمستثمر في المناطق التي توجد بها اتفاقيات شراء للطاقة مجدية مع توفر الشروط القانونية المقبولة.





CONSTRUCTION / ERECTION

Errigal has extensive experience in all aspects of construction and erection activities, ranging from green field to handover of all kind of industrial plants and facilities. Furthermore we have the capability to deliver such projects in accordance with tight schedules and deadlines in some of the most challenging geographical locations around the world.

We have excellent network of partners and affiliates that enables us carry out a very wide range of construction activities with unmatched quality and our approach and flexibility to work in harmony with the local creates a good environment for successful projects implementation.



تتمتع إرقال للطاقة بخبرة واسعة في جميع جوانب أنشطة البناء والتشييد ، بدءًا من مرحلة الحقل الأخضر وحتى مرحلة التسليم لجميع أنواع المصانع والمنشآت الصناعية. علاوة على ذلك، لدينا القدرة على تنفيذ مثل هذه المشاريع وفقًا لجدول زمنية صارمة ومواعيد نهائية في بعض أكثر المواقع الجغرافية تحديًا في جميع أنحاء العالم. لدينا شبكة ممتازة من الشركاء والشركات المتعاونة التي تمكننا من تنفيذ نطاق واسع من أنشطة البناء بجودة لا مثيل لها، ويخلق نهجنا ومرونتنا في العمل في وئام مع البيئة المحلية بيئة جيدة لتنفيذ المشاريع بنجاح.





COMMISSIONING

Commissioning is the most important and critical phase of any project and is the process of planning, documenting, scheduling, testing, adjusting, verifying and training to provide a facility that operates as a fully functional system as per the project requirement. The goal of the commissioning process is to enhance the quality of the delivered project by focusing the design and construction team on the owner's goal for a functional and efficient plant.

Errigal Energy has teams of dedicated, highly skilled personnel with vast experience in carrying out the most important task of any project in accordance with the best international practices. Moreover we have mastered procedures and processes to carry out such critical activities in the most efficient and timely manner. We have rendered our professional commissioning services successfully for world class clients such as ABB, Calik, MASS Group Holding etc.



إختبارات جاهزية التشغيل / التشغيل التجريبي

تعتبر عمليات إختبارات جاهزية التشغيل والتشغيل التجريبي المرحلة الأكثر أهمية وحرًا في تنفيذ أي مشروع وهي عملية التخطيط والتوثيق والجدولة والاختبارات والتعديلات والتحقق والتدريب لتسليم مرفق أو منشأة صناعية تعمل كنظام متكامل وفقًا لمتطلبات المشروع. الهدف من عملية إختبارات جاهزية التشغيل والتشغيل التجريبي هو التأكد من جودة المشروع الذي يراد تسليمه عن طريق تركيز فريق التصميم والبناء على هدف المالك لإستلام مصنع أو منشأة تؤدي وظيفتها بطريقة بكفاءة.

لدى إرغال للطاقة فرق من الموظفين المتخصصين ذوي المهارات والقدرات العالية وخبرات واسعة لتنفيذ المهمة الأكثر أهمية لأي مشروع وفقًا لأفضل الممارسات الدولية. علاوة على ذلك، لقد أتقنت فرقنا الإجراءات والعمليات لتنفيذ مثل هذه الأنشطة الحيوية بأكثر الطرق كفاءة وفي الوقت المناسب. لقد نجحنا في تقديم خدمات إختبارات التشغيل والتشغيل التجريبي الاحترافية بنجاح لعملاء عالميين مثل ABB و Calik و MASS Group Holding ، إلخ.





OPERATIONS

Errigal Energy is capable to provide clients with the comfort of a complete Operations and Maintenance service for their facilities through comprehensive O&M agreement. With our experience, we can assist clients in achieving maximum availability at optimum cost and we can guide clients on the best operational practices and the best CMMS systems adoption and implementation.



إن إرقال للطاقة قادرة على إراحة عملائها من خلال تقديم خدمة تشغيل وصيانة كاملة لمنشأتهم من خلال اتفاقية التشغيل والصيانة الشاملة. من خلال تجربتنا، يمكننا مساعدة العملاء في تحقيق أقصى قدر من التوافر لمنشأتهم بأفضل تكلفة ممكنة، ويمكننا توجيه العملاء حول أفضل الممارسات التشغيلية وأفضل اعتماد وأفضل الخيارات في مجال أنظمة البرمجيات الحاسوبية لإدارة الصيانة (CMMS)



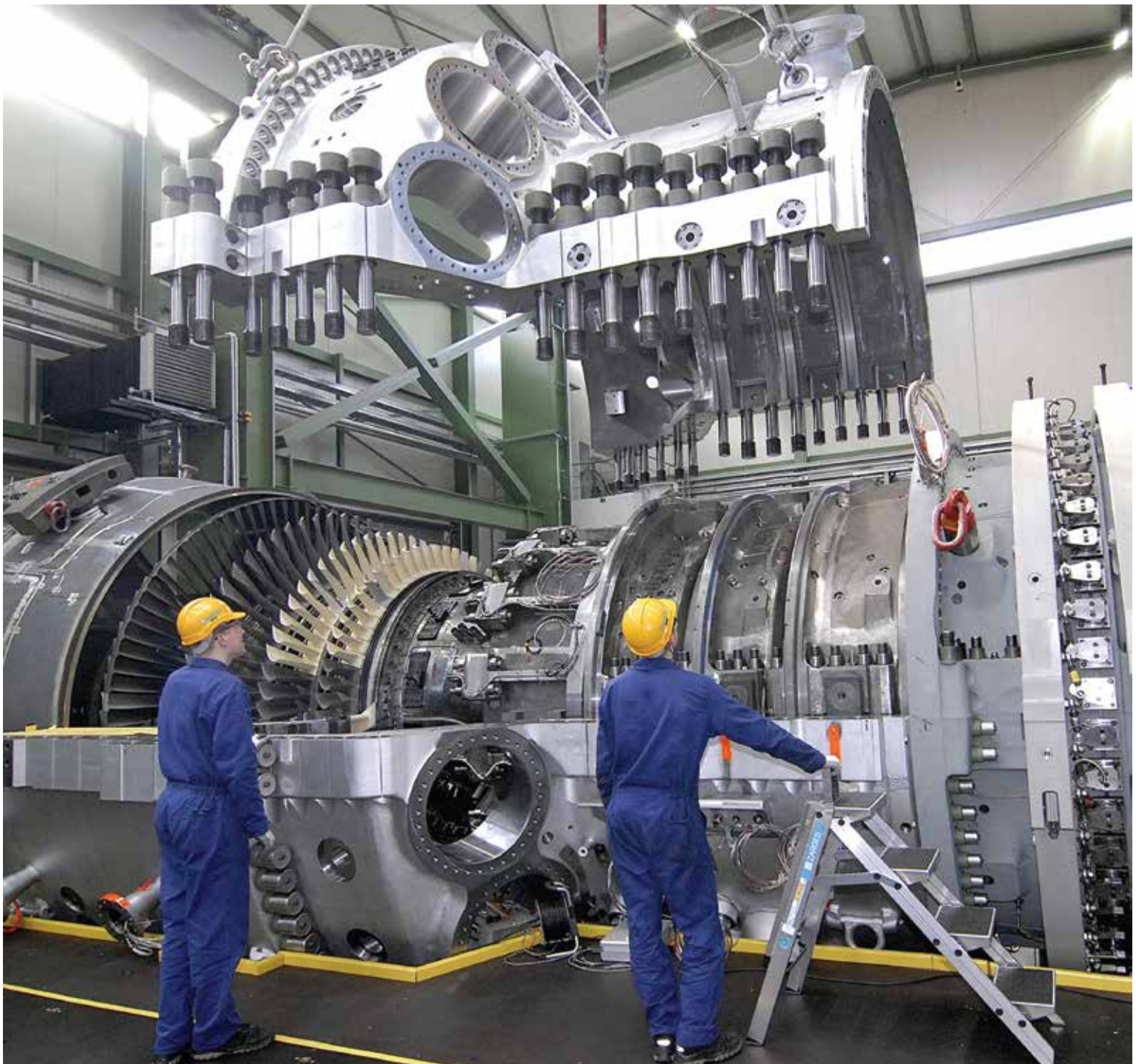


MAINTENANCE

Errigal Energy has an excellent traceable record in providing our clients with outstanding maintenance services. With our experience, we can assist our clients in achieving maximum availability with minimal cost. Our vast experience in carrying out Maintenance Overhauls on OEM equipment has proved that we can surpass the services, quality and timeliness of any other service provider in the market. We pride ourselves as a proven market leader in our ability to offer our clients much reduced outage downtime which not only saving on outage duration but also increasing the equipment availability.

Here are some of the services we can offer as part of our overall package.

- Combustion Inspections
- Hot Gas Path Inspections
- Major Inspections
- Generator Major Inspections
- Gearbox Overhauls
- Compressor Overhauls
- Laser Alignments
- Borescope Inspections
- Control System Calibration
- Metal Disintegration / Spark Erosion



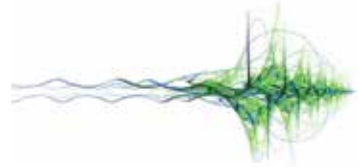
تتمتع إرقال للطاقة بسجل ممتاز -يمكن تتبعه والتحقق منه- في تزويد عملائنا بخدمات الصيانة المتميزة. من خلال خبرتنا، يمكننا مساعدة عملائنا في تحقيق الحد الأقصى من توافر المعدات والمنشآت الصناعية بأقل تكلفة. أثبتت خبرتنا الواسعة في إجراء عمليات صيانة الصيانة على معدات المصنعين الأصليين (OEM) أننا قادرون على التفوق على أي منافس في جودة الخدمات والتوقيت المحدد لإنجاز العمل.

نفخر بكوننا شركة رائدة في السوق أثبتت جدواها ومقدرتها على أن نقدم لعملائنا وقتًا أقل بكثير لإنجاز العمل في فترات الصيانة الشاملة ، مما لا يوفر فقط مدة فترات زمنية مقدرة في فترة الصيانة بل يساهم أيضا في زيادة توافر المنشآت.

فيما يلي بعض الخدمات التي يمكن أن نقدمها كجزء من الحزمة الشاملة.

- فحص وتفتيش غرف الاحتراق
- فحص وتفتيش مسارات الغاز الساخن
- الفحوصات الشاملة والمتكاملة.
- الفحوصات الشاملة للمولدات.
- الصيانة الشاملة لصناديق التروس.
- الصيانات الشاملة للضواغط (الكومبرسات).
- ضبط المحاذاة بالليزر
- الفحص بالبوروسكوب.
- معايرة أنظمة التحكم
- معالجة وتفكيك المعدات والأجزاء المكسورة والمتصلبه.





فحص وتقييم المنشآت الصناعية

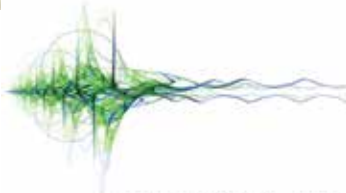
فحص وتقييم المنشآت الصناعية هي عمليات الفحص والاختبارات التي يتم عملها للمكونات المختلفة للمنشأة الصناعية بغرض التأكد من سلامتها للتشغيل وإمكانية قيامها بالأداء المطلوب من الناحية الفنية والجدوى التجارية. تجرى بعض هذه الاختبارات حسب التوصيات الصادرة من المصنعين الأصليين للمعدات، وتجرى الاختبارات الأخرى حسب الممارسات الأمثل من خلال الخبرات العالمية في الصناعة.

لدى إيرغال خبرات لا تضاهاى في مجال إجراء فحوصات واختبارات المنشآت الصناعية ولديها التميز الفني في تقديم النصح والإرشاد للملاك وأصحاب المصلحة لاتباع أفضل الممارسات في هذا الصدد.

في بعض المناطق الجغرافية، هناك حوجة لبعض الأنواع من الفحوصات والاختبارات في فترات زمنية محددة تفرضها الجهات الرسمية والحكومية.

تسهل الفحوصات الدقيقة والمحكمة أعمال التشغيل وبرمجة أعمال الصيانة الدورية والتصحيحية. إجراء الاختبارات والفحوصات بصورة استباقية لا تساعد فقط في التأكد من توافر المنشأة بصورة أمثل بل تساعد أيضا بصورة فعالة في الأداء الإقتصادي الأمثل للمنشأة.





HEAVY ELECTRICAL EQUIPMENT TESTING

Together with our partners we have the capacity to carry out all types of Electrical tests and inspection work on all major equipment from low to medium voltage switchgear to HV testing of Generators, Transformers, Switchyards, Power cables, Isolated Phase Bus Ducts, Gas Insulated Switchgears etc. We have extensive experience in the Installation, testing and commissioning of such equipment. Here is a list of some of the testing for which we have the capability to carry out.

Generator/Motors

Stators/Windings

- Wedge Tightness Check (Mapping)
- Winding Insulation Resistance
- Over Voltage Proof Test (AC / DC)
- Dissipation Factor and Tip-Up (Tan Delta and Capacitance Measurement)
- Partial Discharge Test (Computerized)
- Corona Probe / PD / TVA Test (Slot Discharges)
- Bushing / Dielectric Losses
- Surge Comparison Test
- DC Winding Resistance
- Natural Frequency (Bump) Test
- Contact Resistance

Core

- Visual Inspection
- Electromagnetic Core Imperfection Detection (ELCID) / Low Energy Core Test
- Loop Test / High Energy Core Test
- Core Tightness Inspection

Rotor

- Visual Inspection
- Voltage Drop Test
- Impedance
- DC Winding Resistance
- Insulation Resistance
- Recurrent Surge Oscillograph (RSO)
- Metallurgical Tests on retaining rings (DP & UT)

Exciter and PMG Tests

- On-Line Tests
- Partial Discharge Analysis (Testing, Installation and Commissioning)
- Current / Electrical Signature Analysis
- Vibrations • Acoustic Emission
- IR Thermography
- Harmonic Analysis Measurements

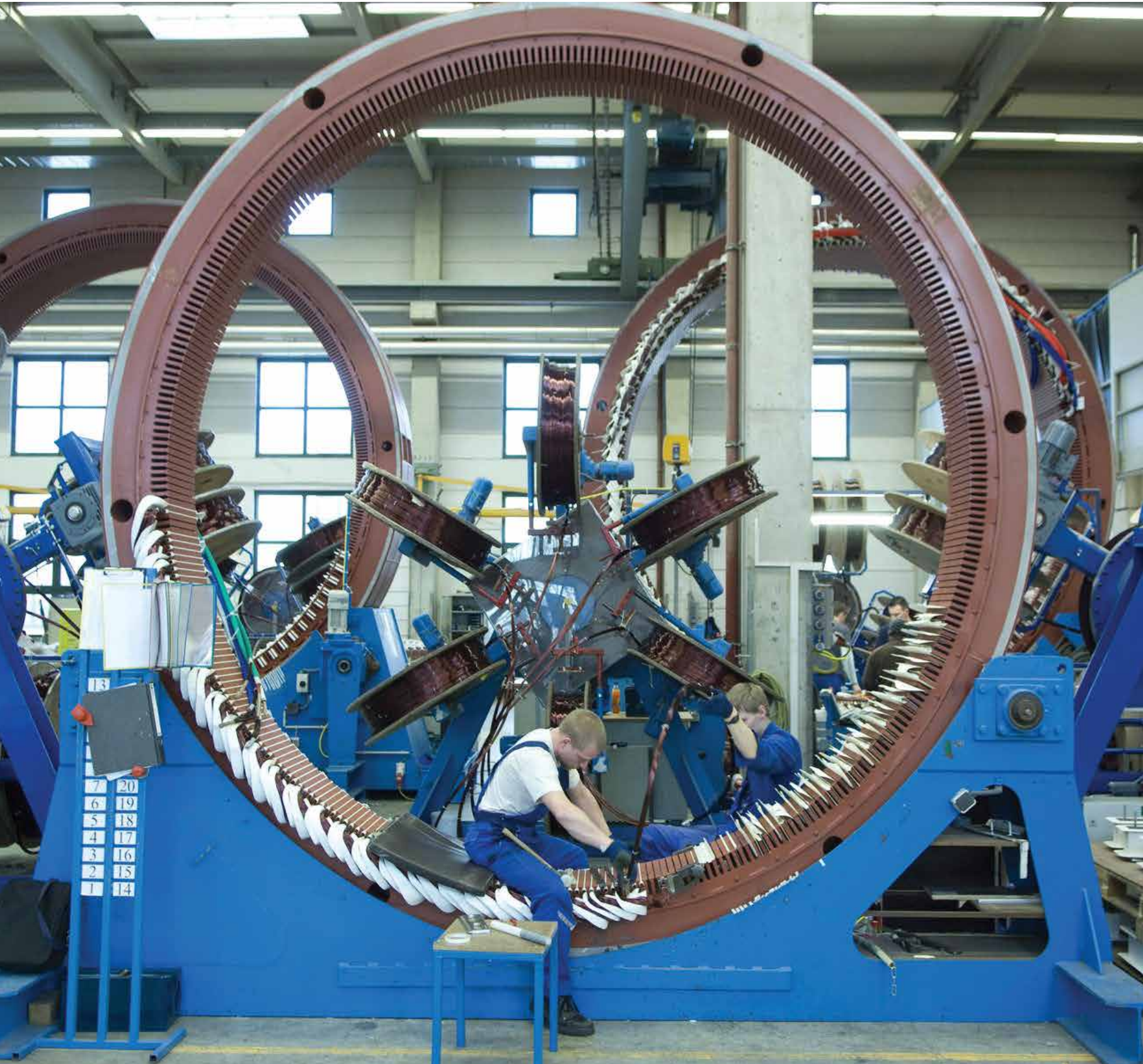
Transformers

- Insulation Resistance
- Dissipation Factor and Tip-Up (Tan Delta and Capacitance Measurement)
- DC High Potential Test
- Contact Resistance
- Turns Ratio



إختبارات المعدات الكهربائية الثقيلة

سويا مع شركائنا، لدينا القدرة على تنفيذ جميع أنواع الإختبارات الكهربائية والفحوصات على جميع القواطع الكهربائية الرئيسية ذات الجهد المنخفض و المتوسط و الجهد العالي بالإضافة لاختبارات المولدات والمحولات ومحطات التحويل والمحولات الكهربائية وكابلات الطاقة وقنوات نقل الطور المعزولة بالغاز والمفاتيح الكهربائية المعزولة بالغاز، إلخ لدينا خبرة واسعة في تركيب واختبار وتشغيل هذه المعدات، توجد قائمة ببعض الخدمات والاختبارات التي لدينا القدرة على تنفيذها في الجزء الإنجليزي من كُتيب الشركة.



EXPERIENCE LIST

BELOW IS A COMPREHENSIVE LIST OF WORKS CARRIED OUT BY ERRIGAL ENERGY AS A COMPANY OR CONTRACTOR OR WORKS CARRIED OUT BY ERRIGAL ENERGY CORE STAFF PRIOR TO JOINING THE COMPANY.

Year	Job Type	Customer	Location	Performed by	Scope
2019	Besmaya 3000MW CCPP	MASS Group Holding	Besmaya, Baghdad, Iraq	EE	Consultancy Services Reporting directly to the Chairman we were contracted to advise on some Technical issues arising at site from an O&M perspective.
2015-2018	Oilfield services ARAMCO	Building and construction Establishment (BAC Est.)	Saudi Arabia	SS	Business Development services Prequalification of BAC Est at ARAMCO for civil works related to oilfields services through Building up the HSE and QA/QC systems for BAC Est. as well as supervising the prequalification process until BAC passed all the requirements and got approved by ARAMCO.
2018	Benghazi Power Plant Libya Alstom GT13E2 and GT13D	Algec/GEECOL	Libya	EE	Site and unit Assessments Contracted through Algec to assist them in site and unit assessments to prepare the plan and logistics for the future outage requirements required at site
2017	Natural Gas Investment	MBR Group from Sudan in collaboration with His Royal Highness Prince Faisal Bin Musaad Al Saud from KSA	Sudan	SS	Consultancy Services Provided Consultancy Services and prepared the techno commercial feasibility study for natural gas investment (for MBR group and their partner) in Sudan to lead for a Final Investment Decision (FID) scenario. At the same time he was key negotiator for the group with the government for the investment process.
2017	BHEL Frame 9E	MGH	Sulamaneyah Iraq	EE	Major Inspection Major inspection of main Gas Turbine and Compressor. Removal of all components including Rotors, inspect all components and replace as required. Carry out all maintenance to auxiliary systems such as Torque convertors, fuel pumps, Atomizing Air Compressor, Stop Valves etc.
2017	BHEL 9E Generator and Exciter	MGH	Sulamaneyah Iraq	EE	High Vibration of Generator Generator was opened and the field removed to identify the cause of high vibration.
2017	BHEL 9E Generator and Exciter	MGH	Sulamaneyah Iraq	EE	Electrical Testing Complete Electrical Testing of Generator Field and Stator and Exciter and life assessment report given to Customer. Tests included Insulation test, Winding Resistance, DC Hi-Pot, Tan Delta, Wedge Deflection, Partial Discharge and Core ring test.
2017	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Combustion inspection GT2, Combustion Inspection of main Gas Turbine and annual maintenance of Auxiliaries
2017	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah Iraq	EE	CI to HGP GT2, Complete HGP and associated Auxiliary workscope. This unit was only due a CI but when we inspected the 1st stage nozzle it was found to be in need of urgent replacing
2017	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Hot Gas Path Inspection GT3, Major Inspection including annual maintenance of Auxiliaries.
2017	GE 9E Generator and Exciter	MGH	Sulamaneyah Iraq	EE	Electrical Testing Complete Electrical Testing of Generator Field and Stator and Exciter and life assessment report given to Customer. Tests included Insulation test, Winding Resistance, DC Hi-Pot, Tan Delta, Wedge Deflection, Partial Discharge and Core ring test.
2017	Brush Generator	MGH	Erbil, Iraq	EE	Minor Inspection GT3, Brush Generator testing carried out and health assessment report given to customer
2016	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah Iraq	EE	Major Inspection Major overhaul of main turbine and compressor including rotor removal. All Auxiliary maintenance carried out.
2016	Rotring Fuel Gas Reducing station	MGH	Sulamaneyah Iraq	EE	Major Inspection Complete Overhaul of all devices associated with the fuel gas Reducing station. All devices calibrated and the system recommissioned.
2016	BHEL Fuel forwarding skid.	MGH	Sulamaneyah Iraq	EE	Major Inspection Pumps, Motors and all associated equipment overhauled, calibrated and recommissioned. Control upgrades and some logic changes also added.
2016	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah Iraq	EE	Combustion inspection GT4, Combustion inspection and Auxiliary work carried out.
2016	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah Iraq	EE	Major Inspection GT5, Assisting with customer and GE on a major inspection of main equipment auxiliary workscope.
2016	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah Iraq	EE	Combustion inspection GT7, combustion inspection including all Speedtronic Control system calibrations



BESMAYA POWER PLANT

EXPERIENCE LIST

Year	Job Type	Customer	Location	Performed by	Scope	Year
2016	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Combustion inspection	GT1, combustion inspection including all Speedtronic Control system calibrations
2016	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Combustion inspection	GT2, combustion inspection including all Speedtronic Control system calibrations
2016	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah Iraq	EE	Combustion inspection	GT8, combustion inspection including all Speedtronic Control system calibrations
2016	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Combustion inspection	GT4, combustion inspection including all Speedtronic Control system calibrations
2016	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Combustion inspection	GT6, combustion inspection including all Speedtronic Control system calibrations
2015	Oilfield Exploitation study	Petrocon UAE	Chad	SS	Engineering Study	Petrocon UAE was interested to invest in exploiting the stranded field (Sedigui) oil and gas resources as a remote oilfield. Eng. SS was lead consultant in preparing the roadmap for exploitation scenarios of the field resources in Power generation and mini refining.
2015	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Hot Gas Path Inspection	GT1, Complete HGP and associated Auxiliary workscope.
2015	Brush Generator	MGH	Erbil, Iraq	EE	Major Inspection	Field removal and complete electrical testing carried out and life assessment report given to customer. Some minor winding repair carried out. Tests included Insulation test, Winding Resistance, DC Hi-Pot, Tan Delta, Wedge Deflection, Partial Discharge and Core ring test.
2015	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Combustion inspection	GT3, combustion inspection including all Speedtronic Control system calibrations
2015	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Combustion inspection	gt4, Combustion Inspection
2015	GE Frame 9E Gas Turbine and Compressor	MGH	EE	Erbil, Iraq	Combustion inspection	GT5 Combustion Inspection
2015	GE Frame 9E Gas Turbine and Compressor	MGH	EE	Erbil, Iraq	Combustion inspection	GT7 Combustion Inspection and all annual auxiliary workscope carried out including Mk vi Speedtronic software upgrades.
2015	GE Frame 9E Gas Turbine and Compressor	MGH	EE	Sulamaneyah Iraq	Major Inspection	Rotor out Major Inspection of main equipment. All auxiliary overhaul, calibration and recommissioning
2015	Brush Generator	MGH	EE	Sulamaneyah Iraq	Major Inspection	Field removal and complete electrical testing carried out and life assessment report given to customer. Some minor winding repair carried out. Tests included Insulation test, Winding Resistance, DC Hi-Pot, Tan Delta, Wedge Deflection, Partial Discharge and Core ring test.
2015	GE Frame 9E Gas Turbine and Compressor	MGH	EE	Sulamaneyah Iraq	Combustion inspection	GT5 Combustion Inspection
2015	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Hot Gas Path Inspection	GT5, Complete HGP and associated Auxiliary workscope. All control system checks and calibration carried out
2015	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Hot Gas Path Inspection	GT6, Complete HGP and associated Auxiliary workscope. All control system checks and calibration carried out
2015	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Hot Gas Path Inspection	GT7, Complete HGP and associated Auxiliary workscope. All control system checks and calibration carried out
2015/2016	GE Frame 9E Gas Turbine and Compressor	Qaiwan Group	Bazyan Sulamaneyah Iraq	MK	Installation and Commissioning	Technical Site Management services for the complete installation of all GE equipment on site.



AL KHAIRAT POWER PLANT

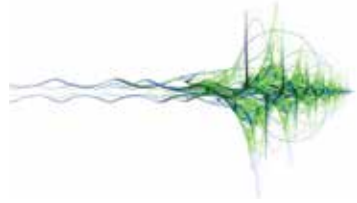
EXPERIENCE LIST

Year	Job Type	Customer	Location	Performed by	Scope	Year
2014/2015	10X GE Frame 9001E	GE	Shat Al Basra	MK	Installation and Commissioning	Contracted to GE to Manage all site activities from Construction through to Commissioning
2014	Iron Ore Mining	ALBAJRAWIYA Mining Co.	Sudan	SS	Engineering Study	He was lead consultant for a study to exploit iron resources in Sudan using small scale approach and possible energy supplies from potential resources.
2014	500MW power plant , Iraq.	ABB Manheim	Dohuk 2	EE	Mechanical installation	Under contract to ABB Manheim to support them with the installation, Erection and Commissioning of all mechanical equipment. Gas turbine and Compressor, main Generator, Auxiliary Skid, Inlet filter house, Gas Pressure reducing Station, Fuel Forwarding. Main Gas Isolation skid, Atomizing air and plant Air systems, Fuel Tank and fuel farm, LV and MV panels, Excitation system, Battery charging systems, Isolated Phase Bus Ducts, Exhaust stacks, all major equipment alignments Testing and Commissioning of all equipment. Including DCS and Speedtronic control system integration.
2014	500MW power plant , Iraq	ABB Manheim	Dohuk 2	EE	Electrical and Control Installation/Commissioning	Under contract to ABB Manheim to support them with the installation, Erection and Commissioning of all Electrical and Control equipment. Gas turbine and Compressor, main Generator, Auxiliary Skid, Inlet filter house, Gas Pressure reducing Station, Fuel Forwarding. Main Gas Isolation skid, Atomizing air and plant Air systems, Fuel Tank and fuel farm, LV and MV panels, Excitation system, Battery charging systems, Isolated Phase Bus Ducts, Exhaust stacks, all major equipment alignments Testing and Commissioning of all equipment
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah Iraq	EE	Major Inspection	GT1, Complete rotor out major inspection and all associated auxiliary and control system checks, tests calibrations and recommissioning. Torque convertor replaced
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Combustion inspection	GT2 Combustion Inspection
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Major Inspection	GT3, Major Overhaul of main equipment and all associated Auxiliaries including Speedtronic control system upgrades
2014	Brush Generator	MGH	Erbil, Iraq	EE	Major Inspection	Field removal and complete electrical testing carried out and life assessment report given to customer. Tests included Insulation test, Winding Resistance, DC Hi-Pot, Tan Delta, Wedge Deflection, Partial Discharge and Core ring test.
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Hot Gas Path Inspection	GT5, Complete HGP and associated Auxiliary workscope. All control system checks and calibration carried out
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah Iraq	EE	Combustion inspection	GT3 Combustion Inspection
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Hot Gas Path Inspection	GT6, Complete HGP and associated Auxiliary workscope. All control system checks and calibration carried out
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Hot Gas Path Inspection	GT7, Complete HGP and associated Auxiliary workscope. All control system checks and calibration carried out
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Hot Gas Path Inspection	GT8, Complete HGP and associated Auxiliary workscope. All control system checks and calibration carried out
2014	Brush Generator	MGH	Erbil, Iraq	EE	Major Inspection	Field removal and complete electrical testing carried out and life assessment report given to customer. Tests included Insulation test, Winding Resistance, DC Hi-Pot, Tan Delta, Wedge Deflection, Partial Discharge and Core ring test.
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah Iraq	EE	Major Inspection	GT4 Major inspection. Assisting General Electric with complete overhaul of main equipment. All control system checks carried out
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah Iraq	EE	Hot Gas Path Inspection	GT6, Complete HGP and associated Auxiliary workscope. All control system checks and calibration carried out
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Combustion inspection	GT3, combustion inspection including all Speedtronic Control system calibrations



EXPERIENCE LIST

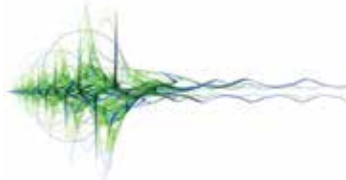
Year	Job Type	Customer	Location	Performed by	Scope	Year
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Combustion inspection	GT6, combustion inspection including all Speedtronic Control system calibrations
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Combustion inspection	GT4, combustion inspection including all Speedtronic Control system calibrations
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Major Inspection	GT2, Assisting with customer and GE on a major inspection of main equipment auxiliary workscope.
2014-2015	6 x GE 9E (125 MW) simple cycle 750 MW Gayyarah Power Plant project	MOE Baghdad	Gayyarah Power Plant project	EE	Commissioning	Assisting and managing commissioning works, To Follow and organise required engineering revisions. Administration of Contractor supervisor (GE), Owner (MOE) and contractor (CALIK) & subcontractor relations, Following QA/QC procedures, Progress tracking and monitoring tools management.
2014	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Combustion inspection	GT5, Combustion Inspection along with all Auxiliary workscope including control system testing and calibration.
2009-2013	National Petroleum Company	Sudapet Co. Ltd. (The National Petroleum Company in Sudan)	Sudan.	SS	Engineering Management	Eng. SS has established the natural gas division and business strategies for Sudan to exploit the discovered gas resources at that time. Many initiatives and strategies were made for the country such as Block 8 remote field small gas exploitation strategy and proposal (in power generation or CNG). Red Sea discovered gas, in block 15, exploitation strategy and proposal through using natural marine platforms (islands). Flared Gas Utilization in Muglad Basin through unconventional technologies. Bentiu Mini refinery/topping plant as a developmental project for South Sudan (before recession of the country from the North)
2013	10 x Frame 9 GE Gas Turbine power plant Installation and Commissioning.	Calik Enerji	Al Khairat	EE	Installation and Commissioning.	Contracted to Calik Enerji to manage and direct Power Plant Erection, Commissioning and Start-up.
2013	500MW power plant Dohuk 2 Iraq.	ABB Manheim	Dohuk 2	EE	Mechanical installation	Under contract to ABB Manheim to support them with the installation, Erection and Commissioning of all mechanical equipment. Gas turbine and Compressor, main Generator, Auxiliary Skid, Inlet filter house, Gas Pressure reducing Station, Fuel Forwarding. Main Gas Isolation skid, Atomizing air and plant Air systems, Fuel Tank and fuel farm, LV and MV panels, Excitation system, Battery charging systems, Isolated Phase Bus Ducts, Exhaust stacks, all major equipment alignments Testing and Commissioning of all equipment. Including DCS and Speedtronic control system integration.
2013	500MW power plant Dohuk 2 Iraq.	ABB Manheim	Dohuk 2	EE	Electrical and Control Installation/Commissioning	Under contract to ABB Manheim to support them with the installation, Erection and Commissioning of all Electrical and Control equipment. Gas turbine and Compressor, main Generator, Auxiliary Skid, Inlet filter house, Gas Pressure reducing Station, Fuel Forwarding. Main Gas Isolation skid, Atomizing air and plant Air systems, Fuel Tank and fuel farm, LV and MV panels, Excitation system, Battery charging systems, Isolated Phase Bus Ducts, Exhaust stacks, all major equipment alignments Testing and Commissioning of all equipment
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Major Inspection	GT4, Major Overhaul of main equipment and all associated Auxiliaries including Speedtronic control system upgrades
2013	Brush Generator	MGH	Dohuk	EE	Major Inspection	Field removal and complete electrical testing carried out and life assessment report given to customer. Tests included Insulation test, Winding Resistance, DC Hi-Pot, Tan Delta, Wedge Deflection, Partial Discharge and Core ring test.
2013	GE Frame 9E Gas Turbine and Compressor	MGH	sulamaneyah	EE	Hot Gas Path Inspection	GT2, Complete HGP and associated Auxiliary workscope. This unit was only due a CI but when we inspected the 1st stage nozzle it was found to be in need of urgent replacing



EXPERIENCE LIST

Year	Job Type	Customer	Location	Performed by	Scope	Year
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Hot Gas Path Inspection	GT1, Complete HGP and associated Auxiliary workscope.
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Combustion Inspection	GT7, Complete CI and associated Auxiliary workscope.
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Erbil, Iraq	EE	Combustion Inspection	GT8, Complete CI and associated Auxiliary workscope.
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah	EE	Hot Gas Path Inspection	GT1, Complete HGP and associated Auxiliary workscope. This unit was only due a CI but when we inspected the 1st stage nozzle it was found to be in need of urgent replacing
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah	EE	Hot Gas Path Inspection	GT2, Complete HGP and associated Auxiliary workscope.
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah	EE	Hot Gas Path Inspection	GT5, Complete HGP and associated Auxiliary workscope.
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah	EE	Hot Gas Path Inspection	GT6, Complete HGP and associated Auxiliary workscope.
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah	EE	Combustion Inspection	GT7, Complete CI and associated Auxiliary workscope.
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Sulamaneyah	EE	Combustion Inspection	GT8, Complete CI and associated Auxiliary workscope.
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Combustion Inspection	GT1, Combustion Inspection along with all Auxiliary workscope including control system testing and calibration.
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Combustion Inspection	GT2, Combustion Inspection along with all Auxiliary workscope including control system testing and calibration.
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Hot Gas Path Inspection	GT3, Complete HGP and associated Auxiliary workscope. All control system checks and calibration carried out
2013	GE Frame 9E Gas Turbine and Compressor	MGH	Dohuk	EE	Hot Gas Path Inspection	GT4, Complete HGP and associated Auxiliary workscope. All control system checks and calibration carried out
2012	500MW power plant Sulamaneyah 2 Iraq.	ABB Manheim	Sulamaneyah 2	EE	Mechanical installation	Under contract to ABB Manheim to support them with the installation, Erection and Commissioning of all mechanical equipment. Gas turbine and Compressor, main Generator, Auxiliary Skid, Inlet filter house, Gas Pressure reducing Station, Fuel Forwarding. Main Gas Isolation skid, Atomizing air and plant Air systems, Fuel Tank and fuel farm, LV and MV panels, Excitation system, Battery charging systems, Isolated Phase Bus Ducts, Exhaust stacks, all major equipment alignments Testing and Commissioning of all equipment. Including DCS and Speedtronic control system integration.
2012	500MW power plant Sulamaneyah 2 Iraq.	ABB Manheim	Sulamaneyah 2	EE	Electrical and Control Installation/Commissioning	Under contract to ABB Manheim to support them with the installation, Erection and Commissioning of all Electrical and Control equipment. Gas turbine and Compressor, main Generator, Auxiliary Skid, Inlet filter house, Gas Pressure reducing Station, Fuel Forwarding. Main Gas Isolation skid, Atomizing air and plant Air systems, Fuel Tank and fuel farm, LV and MV panels, Excitation system, Battery charging systems, Isolated Phase Bus Ducts, Exhaust stacks, all major equipment alignments Testing and Commissioning of all equipment
2012	GE Frame 9E Gas Turbine	MGH	Sulamaneyah	EE	Hot Gas Path Inspection	GT1, Complete HGP and associated Auxiliary workscope.
2012	GE Frame 9E Gas Turbine	MGH	Sulamaneyah	EE	Hot Gas Path Inspection	GT2, Complete HGP and associated Auxiliary workscope.
2012	GE Frame 9E Gas Turbine	MGH	Erbil	EE	Combustion Inspection	GT3, Combustion Inspection along with all Auxiliary workscope including control system testing and calibration.
2012	GE Frame 9E Gas Turbine	MGH	Erbil	EE	Combustion Inspection	GT4, Combustion Inspection along with all Auxiliary workscope including control system testing and calibration.





EXPERIENCE LIST

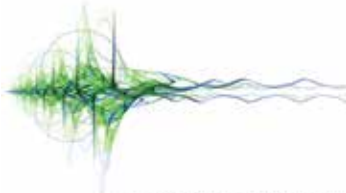
Year	Job Type	Customer	Location	Performed by	Scope	Year
2012	GE Frame 9E Gas Turbine	MGH	Erbil	EE	Combustion Inspection	GT5, Combustion Inspection along with all Auxiliary workscope including control system testing and calibration.
2012	GE Frame 9E Gas Turbine	MGH	Erbil	EE	Combustion Inspection	GT6, Combustion Inspection along with all Auxiliary workscope including control system testing and calibration.
2012	GE Frame 9E Gas Turbine	MGH	Sulamaneyah	EE	Hot Gas Path Inspection	GT2, Complete HGP and associated Auxiliary workscope.
2012	GE Frame 9E Gas Turbine	MGH	Sulamaneyah	EE	Combustion Inspection	GT5, Combustion Inspection along with all Auxiliary workscope including control system testing and calibration.
2012	GE Frame 9E Gas Turbine	MGH	Sulamaneyah	EE	Combustion Inspection	GT6, Combustion Inspection along with all Auxiliary workscope including control system testing and calibration.
2012	GE Frame 9E Gas Turbine	MGH	Dohuk	EE	Hot Gas Path Inspection	GT1, Complete HGP and associated Auxiliary workscope.
2012	GE Frame 9E Gas Turbine	MGH	Dohuk	EE	Hot Gas Path Inspection	GT2, Complete HGP and associated Auxiliary workscope.
2012	GE Frame 9E Gas Turbine	MGH	Dohuk	EE	Combustion Inspection	GT3, Combustion Inspection along with all Auxiliary workscope including control system testing and calibration.
2012	GE Frame 9E Gas Turbine	MGH	Dohuk	EE	Combustion Inspection	GT4, Combustion Inspection along with all Auxiliary workscope including control system testing and calibration.
2012	10 x Frame 9001E	MOE Iraq	Al Khairat Iraq	MK	Installation and Commissioning	GE Site Management services for the installation of the 10 x Frame 9001E unit along with all related auxiliaries from Construction through to Commissioning.
2011	500MW power plant Arbeel 2 Iraq.	ABB Manheim	Erbil	EE	Mechanical installation	Under contract to ABB Manheim to support them with the installation, Erection and Commissioning of all mechanical Electrical and Control equipment. Gas turbine and Compressor, main Generator, Auxiliary Skid, Inlet filter house, Gas Pressure reducing Station, Fuel Forwarding. Main Gas Isolation skid, Atomizing air and plant Air systems, Fuel Tank and fuel farm, LV and MV panels, Excitation system, Battery charging systems, Isolated Phase Bus Ducts, Exhaust stacks, all major equipment alignments Testing and Commissioning of all equipment. Including DCS and Speedtronic control system integration.
2011	500MW power plant Arbeel 2 Iraq.	ABB Manheim	Erbil	EE	Electrical and Control Installation/Commissioning	Under contract to ABB Manheim to support them with the installation, Erection and Commissioning of all Electrical and Control equipment. Gas turbine and Compressor, main Generator, Auxiliary Skid, Inlet filter house, Gas Pressure reducing Station, Fuel Forwarding. Main Gas Isolation skid, Atomizing air and plant Air systems, Fuel Tank and fuel farm, LV and MV panels, Excitation system, Battery charging systems, Isolated Phase Bus Ducts, Exhaust stacks, all major equipment alignments Testing and Commissioning of all equipment
2011	500MW power plant Sulamaneyah 2 Iraq.	ABB Manheim	Sulamaneyah 2	EE	Installation, Erection and Commissioning	Under contract to ABB Manheim to support them with the installation, Erection and Commissioning of all Mechanical, Electrical and Control equipment. Gas turbine and Compressor, main Generator, Auxiliary Skid, Inlet filter house, Gas Pressure reducing Station, Fuel Forwarding. Main Gas Isolation skid, Atomizing air and plant Air systems, Fuel Tank and fuel farm, LV and MV panels,



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Year	Job Type	Customer	Location	Performed by	Scope	Year
2010	Sulamaneyah 500MW gas power station	MASS Global	Kurdistan, Iraq	EE	O&M	Following the completion and during the Commissioning of the first units, Errigal Energy was contracted by MASS Group to Assemble the complete Operation and Maintenance team for the plant. We hired and trained the very first team of local staff to operate the plant going forward.
2009/2010	Frame 9FA01	GE	Emal Dubai	EE	Technical Services	Technical Advisory services for GE for the complete mechanical Installation of 6 x Frame 9FA units.
2008/2009	SGPS Gas Power station	MASS Global	Kurdistan, Iraq	EE	Construction, Erection, Design, Commission.	Mass Global hired Errigal Energy to Manage the complete EPC project from Civil work right through Commissioning and handover to Operation, dealing directly with the OEM for all design changes and quality issues along with all other Erection and Commissioning activities.
2006/2007	Relocation Project from Mexico to South Africa of complete power Plant.	Eskom South Africa	Kendal Power Station	GK+EE	Project Management, Engineering and Site management	Contracted to General Electric for the Complete relocation and refurbishment of 1 complete power plant through to final commissioning and hand-over to customer including provided the Engineering services to manufacture a complete new Intake system and a complete new Exhaust system. We also made redundant the old Excitation and Control panels along with all MV panels and installed and commissioned a complete new Packaged Electronic, Electrical and Control panel.
2005	Rehabilitation project Shauiba Iraq	Fluor Amec	Shauiba Power Station Iraq	GK	Commissioning Management	Contracted Through GE to Fluor Amec to manage all commissioning activities on the rehabilitation project for Shauiba Power station.
2005	Major inspection Frame 5 single shaft	GE	Axzo Nobel Holland	GK	Site management	Contracted to GE to manage the complete Frame 5 major overhaul activities.
2004/2005	OLNG Plant	Shell Oman	Sur Oman	GK	Outage Planning and Coordination	Contracted through GE to manage all outage activities for Shell on the first Major Outage program at the Oman LNG plant.
2004	FPSO vessel	GE Canada.	Newfoundland	GK	Sales negotiations	Travelled to Newfoundland to assist GE Canada in the Technical aspects of the sales preparation for a new Contractual Service Agreement (CSA).
2004	GE Frame 9H	GE	Baglan Bay Wales	GK	Technical Advisory Services	Contracted to GE to provide Technical Advisory Services on the first ever HGP to take place on the Frame 9H prototype unit in Baglan Bay.
2004	Frame 6001B	GE	Salt Union UK	GK	Commissioning services	Carried out liquid fuel commissioning on 1 Frame 6001B dual fuel unit for Scottish and Southern Energy at their Salt Union Power station
2004	Frame 6001B	Statoil	Karsto Norway	GK	Site management services	Site Lead for GE on a major inspection on 1 Frame 6001B DLN unit in Statoil Karsto Norway involving complete overhaul of the Renk Load Gear and inspection of the Accessory gearbox.
2003	Frame 5002 Twin Shaft	Exxon Mobil	Beryl Alpha Platform North Sea	GK	Technical Advisory Services	Site Lead on a major inspection of 1 Frame 5002 twin shaft unit for Exxon Mobil on the Beryl Alpha Platform to perform all Mechanical Change out and Control system calibrations and Commissioning of the unit.
2003	Frame 9001E	Thames Power	Barking UK	GK	Technical Advisory Services	Project Manager on the spring shutdown at Barking power station for GE Energy Services. Shutdown consisted of a Hot gas path inspection and Major inspection on 2 x 9001E units with DLN1



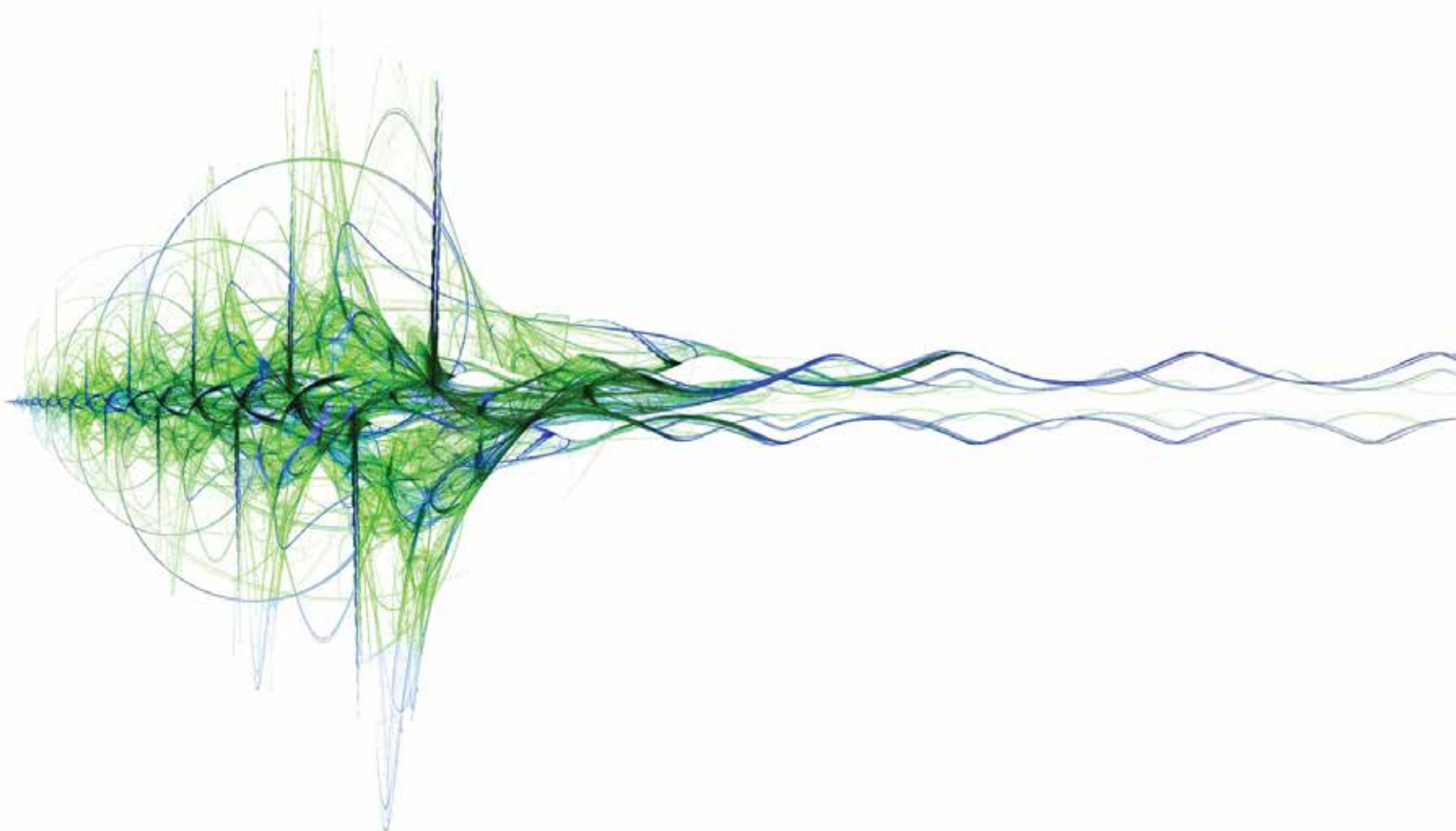


EXPERIENCE LIST

Year	Job Type	Customer	Location	Performed by	Scope	Year
						with a complete major work scope on auxiliary, controls and calibrations.
2002	Oil rigs	BP	BP ETAP Platform	GK	Technical Advisory Services	GE Site Manager on the BP Etap Platform. This was a forced shutdown due to the failure of one of their load gearboxes and turbine bearings on a Thomassen Frame 6001 duel fuel unit.
2002	Oil rigs	BP	Magnus Platform North sea	GK	Technical Advisory Services	GE Project Manager on the BP Magnus Platform. We carried out 1 major overhaul on a frame 5001P and trouble-shooting temperature spreads on another.
2002	MLNG compressor trains	Nuovo Pignone	Malaysia	GK	Commissioning services	Commissioning TA services on the installation through to start up and commissioning of 4 7001EA compressor and generator drives units in Bintulu Malaysia.
2002	Frame 7001FA	ISP	Troy Ohio USA	GK	Commissioning services	GE Mechanical Start-up and commissioning TA in Troy Ohio on the installation and start-up of 4x 7001FA duel fuel units combined cycle with MKVI control system.
2001	Frame 7001FA	GE	Troy Ohio USA	GK	Consultancy Services	Mechanical Advisory services on the installation of 4x 7001FA duel fuel units at Troy Ohio.
2001	Siemens/Westinghouse 251B	Atlantic Projects LTD	Boise Idaho USA	GK	Consultancy Services	Technical advisory services on the installation of 2 Siemens Westinghouse 251B units and 2 LM2500 units in Mountain Home Idaho overseeing the entire project.

Legend:

EE: Errigal Energy, GK: Gavin Kelly, MK: Mark Kelly, SS: Sami Suliman





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