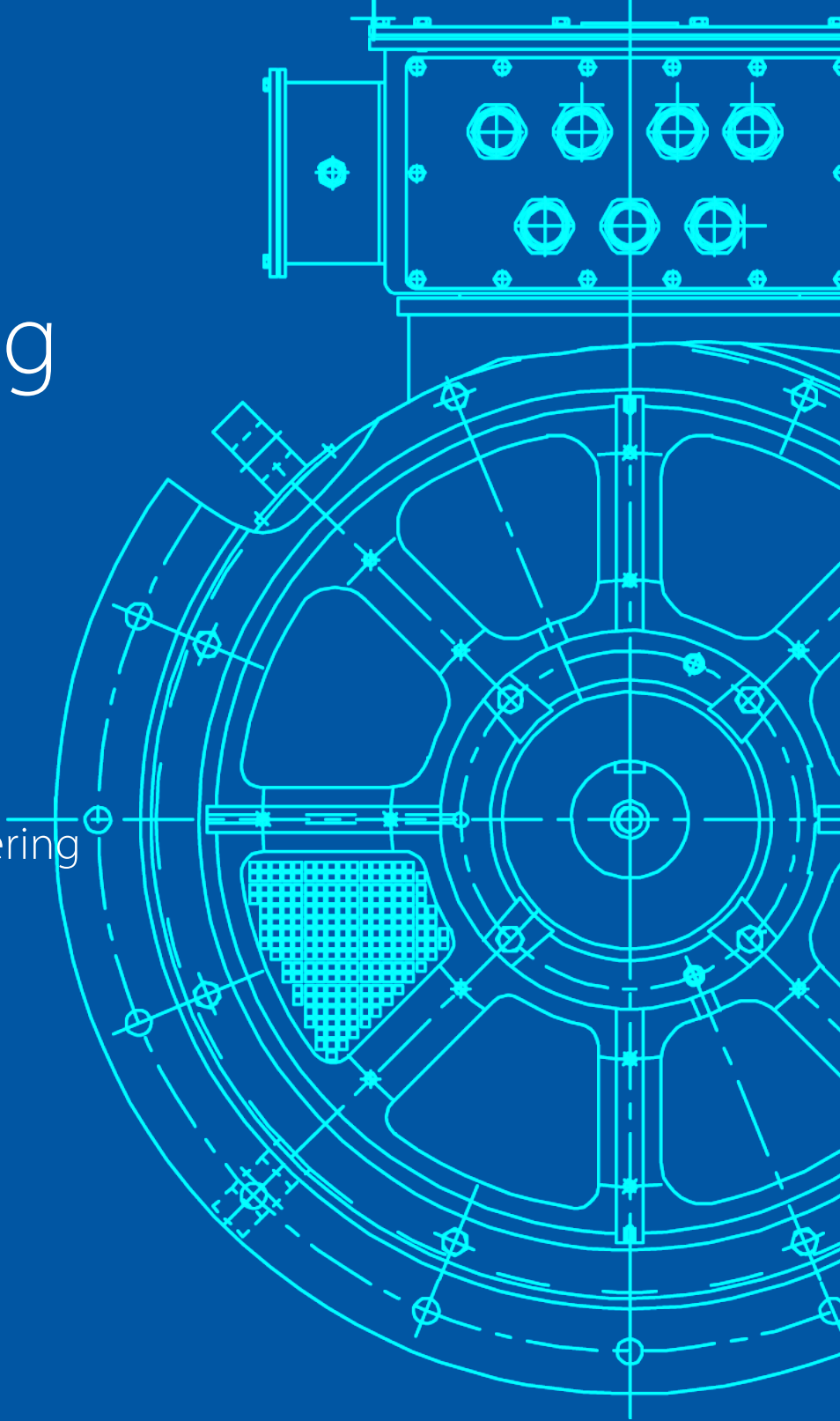


The rotating machines experts

- Technical Services
- Design
- Application Engineering
- New Equipment



THE QUEEN'S AWARDS
FOR ENTERPRISE
2009



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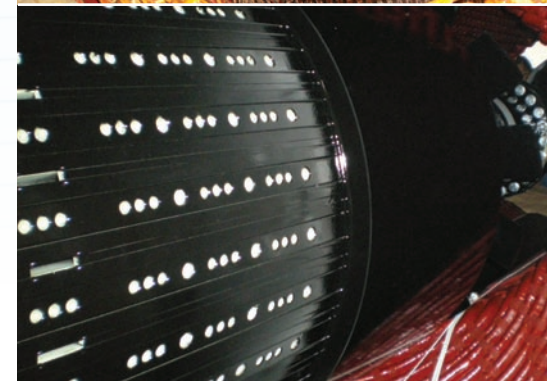


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PPI Engineering Ltd

PPI Engineering specialises in the supply and support of rotating electrical machines and associated equipment. We operate an ISO9001:2008 quality system and have an established reputation for technical excellence, quality and reliability. Our range of products and services are detailed below and include the ability to provide worldwide support using qualified personnel having extensive onshore and offshore mechanical and electrical expertise. PPI's key objective is to support and improve the performance of our customers by assisting them to – reduce operating costs; increase equipment life; improve process efficiency; improve reliability and increase availability; introduce the latest technology; increase operator skills. Our employees are drawn from the major UK electrical machines manufacturers and have experience of supporting equipment from the European, Asian and the American manufacturers. We have a developed customer base in the UK, mainland Europe,

North America and the Middle and Far East. PPI have identified renewable energy as a growth market they can adapt products and services for. PPI has worked on a number of renewable projects including several tidal and wind projects.





Potencia Industrial

Supply of New Equipment In Partnership with Potencia Industrial

PPI and Potencia Industrial have teamed up to offer design support, supply and installation services of multi-megawatt permanent magnet generators for the offshore renewables industry. The two companies have formed a JVC bringing together the extensive generator design and installation experience of PPI Engineering and the established design and manufacturing experience of Potencia Industrial. Together the JVC forms a formidable international partnership which provides design, manufacturing, testing, installation and after market support capabilities for generator applications worldwide.

PPI specifies, designs and supplies the following new equipment –

Induction machines

Three phase induction motors up to 15kV to 20,000HP.
PPI can provide both standard and custom built designs:

- Standard industrial products
- Hazardous area and high ingress protection design
- High efficiency
- CACA, TEFC, CACW and EV cooling
- Reverse engineered products to ensure mechanical and electrical interchangeability with existing equipment
- Stiff shaft two pole machines
- Customer specified performance characteristics.

Synchronous machines

Motors and generators can be provided from approximately 500kVA to 100MVA suitable for use with:

- Compressors (centrifugal and reciprocating)
- Diesel engines
- Gas and steam turbines
- Hydro-electric turbines.

The product range is as follows:

- 2 Pole – 5MVA to 100MVA, air cooled rotors, 6.6kV-15kV, 50/60Hz
- 4 Pole – 250kVA to 50MVA, salient pole, 400V-15kV, 50/60Hz
- Multipole – rating as required, salient pole, 400V-15kV, 50/60Hz. In addition we have partnership agreements in place that enable us to supply the following equipment –

Direct current machines

PPI can supply a wide range of DC motors and generators from fractional horsepower sizes up to several hundred kilowatts and with voltages up to 1000v.

Transformers

The following transformers and wound components are available:

- Three phase power transformers with outputs from approximately 1MVA to 500MVA and voltages up to 240kV
- Dry type air cooled transformers
- Liquid filled mineral oil and synthetic fluid types
- Air cored, iron cored chokes and reactors
- Cast resin transformers
- Special coils and wound components
- Water cooled windings
- Neutral earthing transformers and resistor cubicles
- Voltage transformers and metering current transformers.

We can also offer a bespoke design service and the ability to reverse engineer to replace obsolete equipment.

Generators for Renewables

- Generator – high level design and supply
- Turbine commissioning
- On-site support
- In-situ repairs OEM experience with service response
- Work with the customer to solve problems
- Provision of a cost effective package for whole life support.

Products

- Multipole synchronous Motors and Generators
- Asynchronous Motors and Generators
- Permanent Magnet Generators
- Special applications
- Associated equipment.

Design

Our design team includes engineers with experience in the mechanical and electrical design aspects of Induction and Synchronous Machines as well as excitation and control equipment and power generation packages. Recent projects include design and supply of induction generators and various special purpose motors as well as four pole cylindrical rotor generators.

Technical Services

Diagnostics, reengineering, repair and on site support of electromechanical equipment including -

- Electrical rotating machines – LV and HV motors and generators
- 2-Pole generator repair – rotor and stator pack replacement, rotor end bell replacement, rotor rewind, stator rewind and stator rewedging
- Transformers and switchgear
- Control and protection equipment
- Battery chargers and auxiliary plant
- Mechanical plant.

Operation and maintenance support

- Planned and preventative maintenance of rotating electrical equipment, switchgear and transformers
- Long term service agreements with performance guarantees and cover for routine and unplanned maintenance
- Feasibility studies
- Plant and equipment condition audits and production of maintenance schedules
- Ongoing condition monitoring of major items of plant. capability to retrofit condition-monitoring instrumentation to existing equipment
- Recommend and implement options for life extensions of major pieces of electrical plant
- Technical training packages for personnel in the operation of key items of electrical plant.

Project management, expediting, witness testing and inspection



Application engineering

PPI works with our customers to provide them with the best solution for their application problems. Our engineers have extensive application design experience and the latest CAD and CAE design tools, allowing the modelling of all aspects of the performance of electrical machines.

Expert opinion

PPI provides a diagnostic and consultancy service to:

- Users of electrical machines
- Insurance companies and loss adjusters
- Government bodies.

We can provide support and expert opinion in the following areas:

- Electrical rotating machine design and application
- Excitation and control systems
- Power system stability
- Condition monitoring and maintenance regimes
- Total cost of ownership.

PPI & Eastern Wind Energy Group (EWEG)

- Platform to showcase PPI's capabilities and strengths to major players in offshore wind industry
- Opportunity for PPI to participate in the UK governments drive to establish a viable UK offshore wind industry
- Aim to provide a support and service capability for electrical equipment offshore
- PPI see an opportunity to develop a UK based assembly test and service facility for generators
- Strategically based on the East Anglian coastline adjacent to the Crown Estate round 3 offshore wind sites.

Switchgear

PPI can supply, install and support custom-built medium voltage switchgear, control gear and specialised distribution equipment. We can supply ASTA certified bus bar systems short circuit level tested to 140kA.

Products include:

- Main and emergency switchboards
- Motor starting cubicles
- Generator excitation panels
- Battery charging equipment
- Distribution boards
- Automatic synchronising and load sharing controls.



PPI has its head office in the United Kingdom and support organisations in Europe, Middle East (UAE), North America, China, and Australasia.

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