

Bacton Gas Terminal secures coupling reliability with Bibby Turboflex

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The Bacton Gas Terminal supplies up to a third of the UK's total gas demand, whilst also exporting gas to Europe¹. Now more than ever, the reliability of the nation's energy supply is paramount, making the Bacton complex one of the UK's most crucial energy infrastructure assets. To support continued reliability at one of the six gas terminals making up the complex, Bibby Turboflex recently refurbished a critical gas compressor coupling which had been operational for two decades.

Located on the Norfolk coast, the Bacton Gas Terminal can process up to 58 million cubic metres of gas per day², most of which is extracted from North Sea oilfields, delivering it via pipeline to homes and businesses across the UK. The UK Government estimates gas constituted 41.9% of all inland energy consumption in 2020³, therefore ensuring reliability at sites like Bacton Gas Terminal is essential for supporting the UK's energy needs. Generally, it is recommended that plant operators hold critical spares, such as power transmission products, to maximise operational efficiency and minimise breakdowns and downtime.

Installed between a gas turbine and a high-speed compressor, the Bibby Turboflex high performance 305S Torquemeter disc coupling operated at peak performance for more than 20 years. With a torque rating up to 100 kNm and a max speed of 7700 RPM, this unique coupling features an integrated torque meter that measures asset efficiency ensuring maximum gas output. Due to its length in service, plant

operators decided to install the site's spare coupling and return the original operational coupling back to Bibby for a health check and any necessary refurbishments.

A leading brand of Altra Industrial Motion Corp., Bibby Turboflex is a market leader in the design and manufacture of high performance engineered couplings specifically designed for turbomachinery applications.

The coupling was returned to Altra's Bedford facility. Within two weeks, the coupling was disassembled and removed from the bearing casing. All components were cleaned, de-greased and checked, with major components then shot blasted. Utilising a coordinate measuring machine (CMM), the critical dimensions of all parts were checked against the original coupling drawings. A thorough magnetic particle inspection (MPI) was performed and a written detailed inspection report, including photos of any defects, sent to the customer.

Subsequently, Bibby replaced all flexible elements and hardware. The coupling was then re-phosphated, re-assembled and dynamically balanced back to original specification prior to shipping back. The complete overhaul returned the coupling to its original production condition. The coupling was delivered back to the customer with a full 1-year warranty.

The local engineering capabilities offered by Bibby meant that the coupling could be returned to an optimal condition quickly. The plant maintained operation efficiency by holding a critical spare coupling in stock, therefore allowing the operational coupling to be sent back for repair. Furthermore, refurbishment provided increased value compared to supplying an all-new custom coupling. In addition to the significant cost reduction and time saving repair offers over purchasing new, repairing the coupling had a much lower carbon impact on the environment.

With securing energy supply an ever more pressing issue, operators choosing reliable power transmission components backed by responsive OEM maintenance support can help maximise operational efficiency by minimising downtime and failures. As a result, homes and businesses can be sure of reliable power and heating all year round. The next time you turn on the lights, heating or water think about the quality rotating equipment which supports those everyday utilities.

Sources:

- ¹ <https://www.shell.co.uk/about-us/what-we-do/bacton-gas-plant/about-bacton-gas-plant.html>
- ² <https://www.fluxys.com/en/company/interconnector-uk/infrastructure>
- ³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1032260/UK_Energy_in_Brief_2021.pdf

Image captions:



Image 1: Now more than ever, the reliability of the nation's energy supply is paramount. (AdobeStock_248615217)



Image 2: Bibby Turboflex high performance 305S Torquemeter disc coupling.

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About Bibby Turboflex

Since 1917, with the introduction of the resilient grid coupling, Bibby Turboflex has been recognised as a global leader in the design and manufacture of highly-engineered industrial couplings. Bibby develops reliable and safe power transmission solutions that eliminate downtime and optimise efficiency.

World-class Bibby Turboflex product lines include grid, gear and pin & bush couplings, high performance Torsiflex and Transmissions disc couplings plus a wide range of torque limiters and torque limiting modules.

Bibby Turboflex solutions can be found hard at work in a variety of key markets including power generation, metals, oil & gas and food & beverage on applications such as pumps, conveyors, gearboxes, fans & blowers, compressors, printing presses, gas & steam turbines, generators, ball mills, extruders and marine/offshore platforms.

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