

Case Study

Unique CHP and Generator Solution for Gas to Grid Site

Client: Murrow AD Ltd, Somerset Farm

Sector: Utilities & Biogas

Location: Murrow, Wisbech, Cambridgeshire



BACKGROUND

The Murrow AD team approached Shenton Group to help design the complete CHP and generator system. Due to the nature of all Gas to Grid sites, there was a requirement to power very large gas compressors and a biogas upgrading unit without incurring high energy consumption costs. Another requirement was for the solution to operate in island mode totally independent from the grid if necessary.

Historically the Anaerobic Digestion plant was producing biogas by being fed with a mixture of cattle muck and vegetables. This gas was then being used to run two existing CHP units generating revenue from the electricity produced. Adapt Biogas, the operations management company for the Murrow AD Plant had further plans for the site.

The site was expanded to increase the gas production capacity and entered into a contract to supply gas to the National Grid. This was done by upgrading the biogas to a biomethane standard and

Products/ Services

- **2 No. 500kWe dual fuel CHP units in acoustic containers**
- **330kVA diesel generator**
- **Gas treatment skid & desulphurisation unit**
- **Bespoke control system and software programming**
- **Commissioning services**
- **G99 witness testing**
- **Maintenance contract**

injecting it into the national grid's gas pipeline under very high pressure. Due to the site having a very limited import and export capacity, Shenton Group designed a system to monitor and react to the sites mains connection condition, both to maximise power stability whilst complying with the strict requirements from the DNO.



PROJECT OVERVIEW

We designed, supplied, project-managed, installed, and commissioned a turnkey solution, which enabled the new equipment we provided to synchronize and co-operate with the legacy CHP units already on site.

The CHPs are dual fueled to allow the client to have the option to run on the gas their process makes - so if the price differential between selling upgraded gas to the grid drops against the production of biogas, the option to be self sufficient whilst maximising revenue earned is still maintained. There is also the long term option of connecting the CHP units to a mains gas supply should the cost of LNG go up in the future.

The electricity produced here is utilised on site to support the gas upgrading system as well as the high pressure gas injection point, power is also utilised to maintain all site operations, with any excess able to be exported to the grid.

This is a truly unique solution for the industry, and I was pleased to play a role in delivering it.

Our expertise shines through on these more complex solutions, and it is always rewarding when we exceed the client's expectations on what can be achieved."

Phill Greenbury Project Manager, Shenton Group

OUTCOME

As an outcome of our installation, the client's infrastructure is now fully upgraded to meet the demands and requirements of the site. The solution we designed successfully provides power for the high-pressure Gas to Grid system and enables Adapt Biogas to supply gas to the National Grid. Further peace of mind is also offered by knowing the CHP units and generator are protected by a Shenton Group maintenance and monitoring contract.



“ Our recent expansion was a proud achievement for all involved. Utilising innovative technology for our flagship site, enables us to be at the forefront of renewable energy production.

The installation from Shenton Group not only ensures that we are fully supported during our gas generation and power consumption, but also means our equipment is maintained to a level of high standard throughout our production.

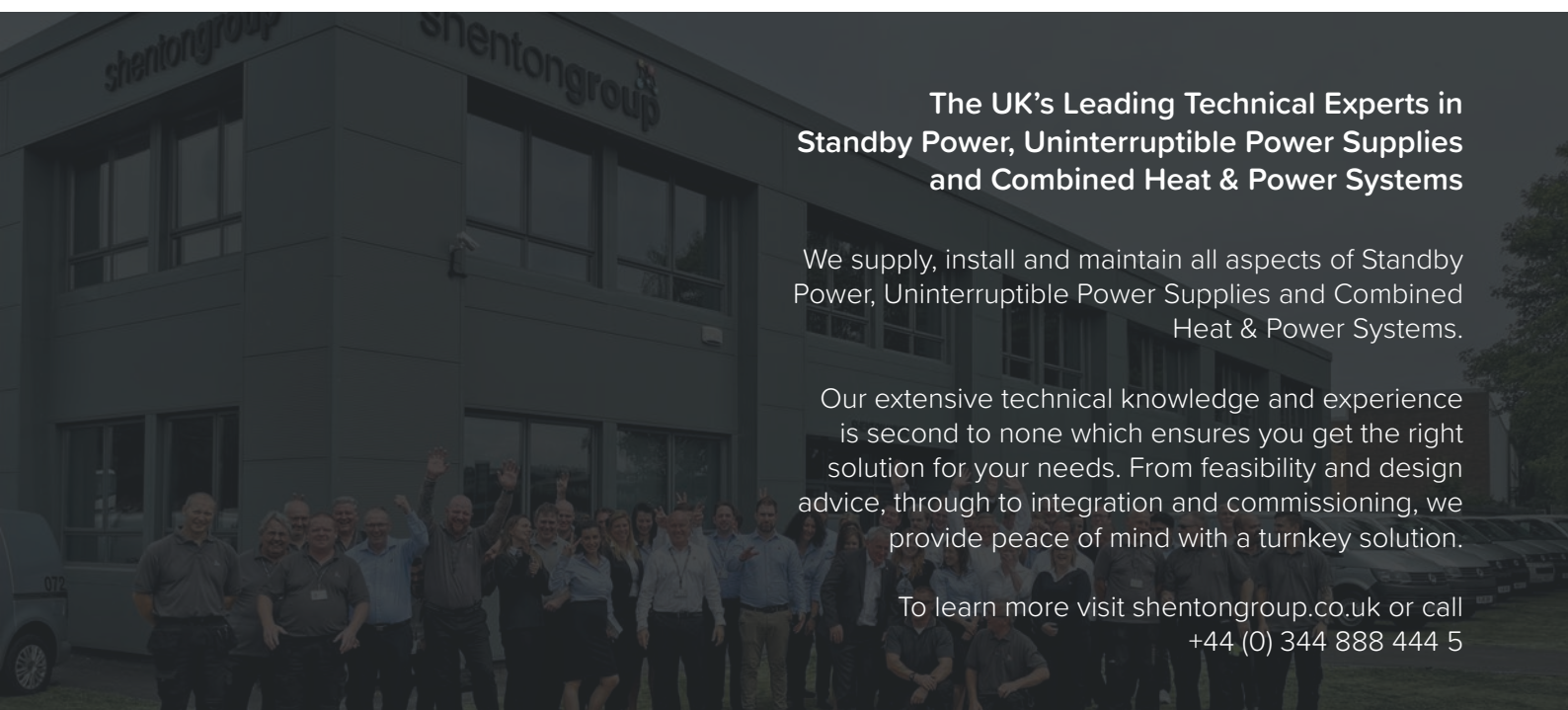
Running in island mode function also reduces energy losses when facing local power outages or required network downtime.”

Sophie Swan, Operations Manager Adapt Biogas



INTERESTING/ UNIQUE POINTS

- Getting the new CHP units to integrate and work with the existing CHP units on site
- The controls package was very bespoke and complex, and it enables full remote monitoring
- The ability to black-start in the absence of any mains power recover the site back to full operation



**The UK's Leading Technical Experts in
Standby Power, Uninterruptible Power Supplies
and Combined Heat & Power Systems**

We supply, install and maintain all aspects of Standby Power, Uninterruptible Power Supplies and Combined Heat & Power Systems.

Our extensive technical knowledge and experience is second to none which ensures you get the right solution for your needs. From feasibility and design advice, through to integration and commissioning, we provide peace of mind with a turnkey solution.

To learn more visit shentongroup.co.uk or call +44 (0) 344 888 444 5

