COOPERÖSTLUND

Making energy easy

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"Thanks to CooperÖstlund's knowledge, expertise and creative thinking, our AD operation has been transformed. Alongside completely eliminating organic waste and becoming self-sufficient in terms of energy overheads, our plant now generates more than £200,000 revenue every year!"

Stephen Temple, co-owner,
MRS TEMPLE'S CHEESES

COOPERÖSTLUND

CooperÖstlund is the UK's leading provider of gas engine specification, installation and maintenance services, with specialist expertise in the renewable energy sector.

Established in 2006 by Johan Östlund and Stuart Cooper, the company is headquartered in central Northamptonshire, with expertly-trained service teams situated nationwide. This coverage ensures a friendly, local service, with an industry-leading customer call-out response time of less than four hours.

As an independent business, CooperÖstlund continues to work with each of the world's leading equipment manufacturers, providing a completely impartial solution to respond to the exacting requirements of each project brief. From initial site surveys and installation, right through to lifetime maintenance provision, CooperÖstlund helps sites to cut carbon emissions, minimise waste and save up to 40% every year on utility bills.

With unsurpassed experience across both co-generation engines – combined heat and power (CHP) systems – and tri-generation engines – combined heat, power and chilling (CHPC) – CooperÖstlund makes energy easy.

"The CooperÖstlund team was a key partner in the development of our Bishops Cleeve AD site. They delivered the perfect solution for our requirements and we can't thank them enough."

John Stait, operations manager, **ANDIGESTION**

THE TOTAL SOLUTION

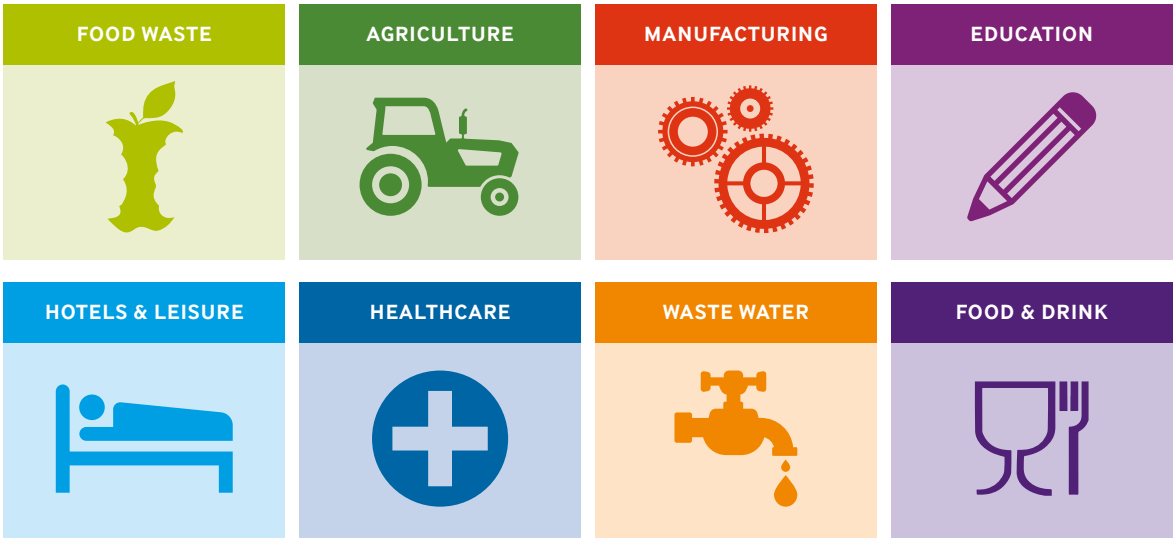
Delivering projects for clients across the UK, CooperÖstlund has unparalleled experience in both co-generation and tri-generation gas engines.

From initial site surveys, consultancy and collaborative project planning, through to equipment installation, site commissioning and ongoing maintenance provision, CooperÖstlund takes business type, size, energy requirements and operational processes into close consideration, before delivering the optimum engine solution.

Alongside milestone servicing and in-situ performance diagnostics, the company offers a remote monitoring option, enabling engineers to access engines from an off-site location. This keeps your site running, at full capacity, throughout the day and night – keeping engine downtime to a minimum and maximising return on investment.

However, while specialising in the renewable energy sector, CooperÖstlund's expertise doesn't end there. In fact, the team continues to work with businesses from a wide range of industries looking to generate power on-site.

Key industries include:



So, whether looking to heat your hotel or power your production plant, CooperÖstlund provides the complete solution.

CASE STUDY

Andigestion

PROJECT

Andigestion AD facility

LOCATION

Bishops Cleeve, Gloucestershire

INPUT

34,000 tonnes of food waste per annum

OUTPUT

Upgraded biogas, injected directly into the National Gas Grid

1 BRITANNIA CENTRE, RYEHILL CLOSE, LODGE FARM INDUSTRIAL ESTATE, DUSTON, NORTHAMPTON, NN5 7UA

Cheltenham-based Andigestion is one of the UK's largest gas-to-grid (G2G) anaerobic digestion (AD) facilities. Opened in November 2014, the site recycles more than 34,000 tonnes of food waste every year.

Collecting plate scrapings, leftovers and out-of-date produce from homes and businesses across Gloucestershire, Andigestion uses gas-to-grid (G2G) technology to purify methane generated in the AD process and upgrade it to reflect the properties of natural gas. By doing so, renewable energy can be sent directly to the national gas grid and used almost immediately in homes nationwide.

As part of initial site development plans, Andigestion's owners made the decision to operate grid-free. Simply, this meant that no mains power (electricity or gas) would be used on site. Instead, the plant was to be completely self-sufficient – effectively repurposing the energy it created.

Andigestion therefore looked towards gas engine specification and maintenance expert – CooperÖstlund – to specify and install a 350 kW, 8-cylinder combined heat and power (CHP) engine. Working alongside G2G technology, this would convert a nominal percentage of the captured biogas into electricity, which would be used to power the site's lighting, de-packaging plant, air compressors and water pumps, with all surplus electricity sold back to the National Grid.

Following Andigestion's official opening in 2015, the site has continued to operate using self-generated renewable electricity and heat, while exporting surplus biomethane to the National Gas Grid. Furthermore, the facility is now one of the only AD sites in the country to boast 'island mode' – meaning that it can continue to operate even in the event of the National Grid going down.

Jon Stait, operations manager at Andigestion, commented: "As one of the country's most advanced AD facilities, our Bishops Cleeve site provides a sustainable waste management solution for homes and businesses across the Gloucestershire region. Operating entirely free of mains power, the site is as environmentally-friendly as it could be!

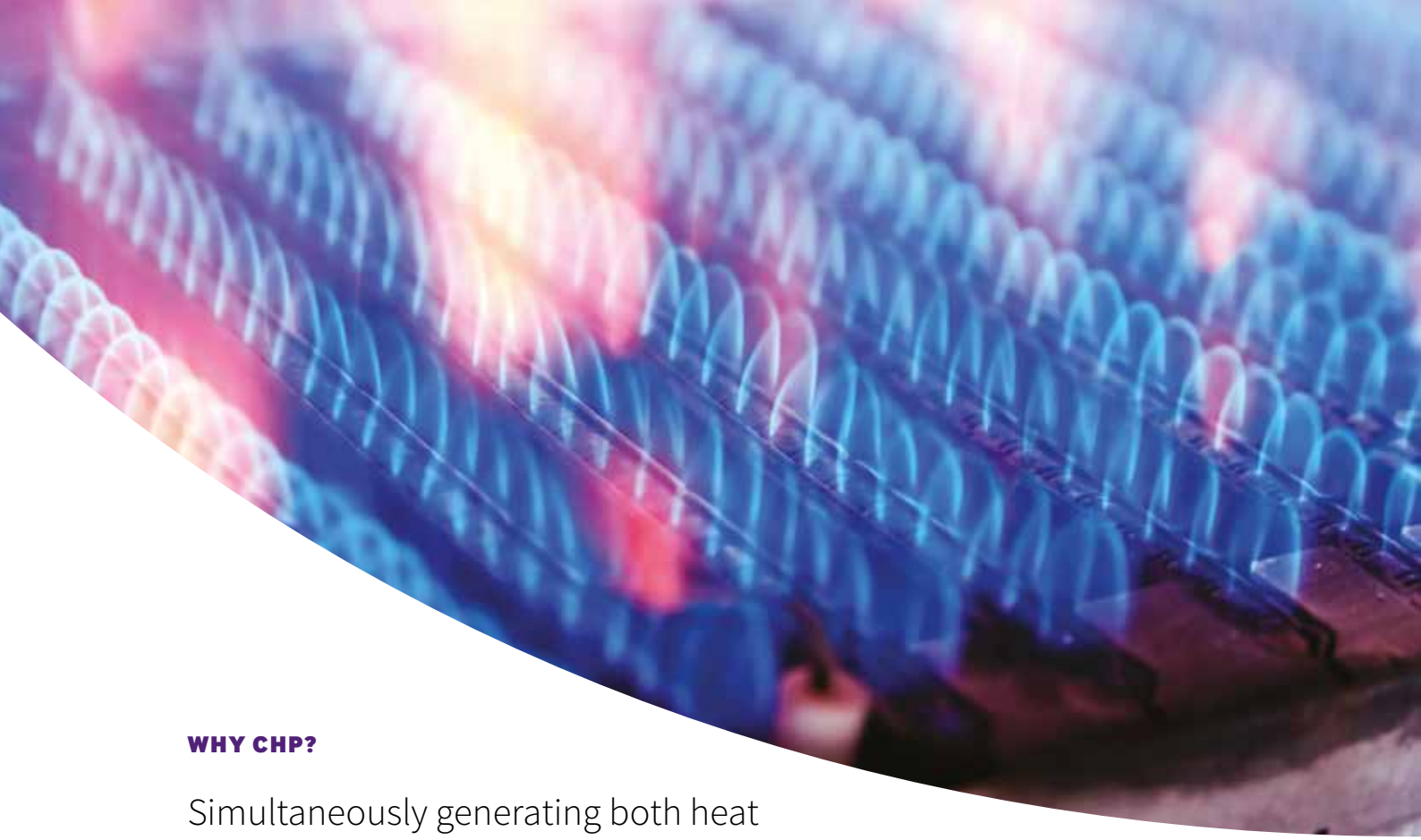
"However, this wouldn't have been achievable without the assistance of CooperÖstlund, whose knowledge, expertise and creative thinking were a critical part of site development. The team delivered the perfect solution for our requirements and we can't thank them enough."

CooperÖstlund now provides ongoing servicing and maintenance support for the Andigestion site, ensuring the CHP engine continues to operate throughout the day and night, generating a significant volume of renewable energy and minimising payback times.

Upgraded methane is injected directly into the national gas grid

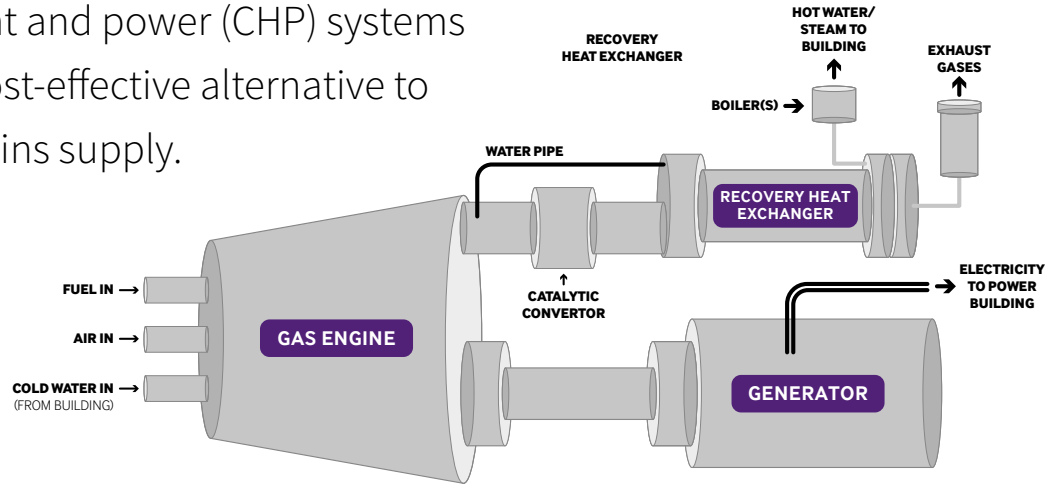
"This project wouldn't have been achieveable without the assistance of CooperÖstlund"

John Stait, operations manager, **ANDIGESTION**



WHY CHP?

Simultaneously generating both heat and electricity from a single fuel source, combined heat and power (CHP) systems are a highly cost-effective alternative to traditional mains supply.



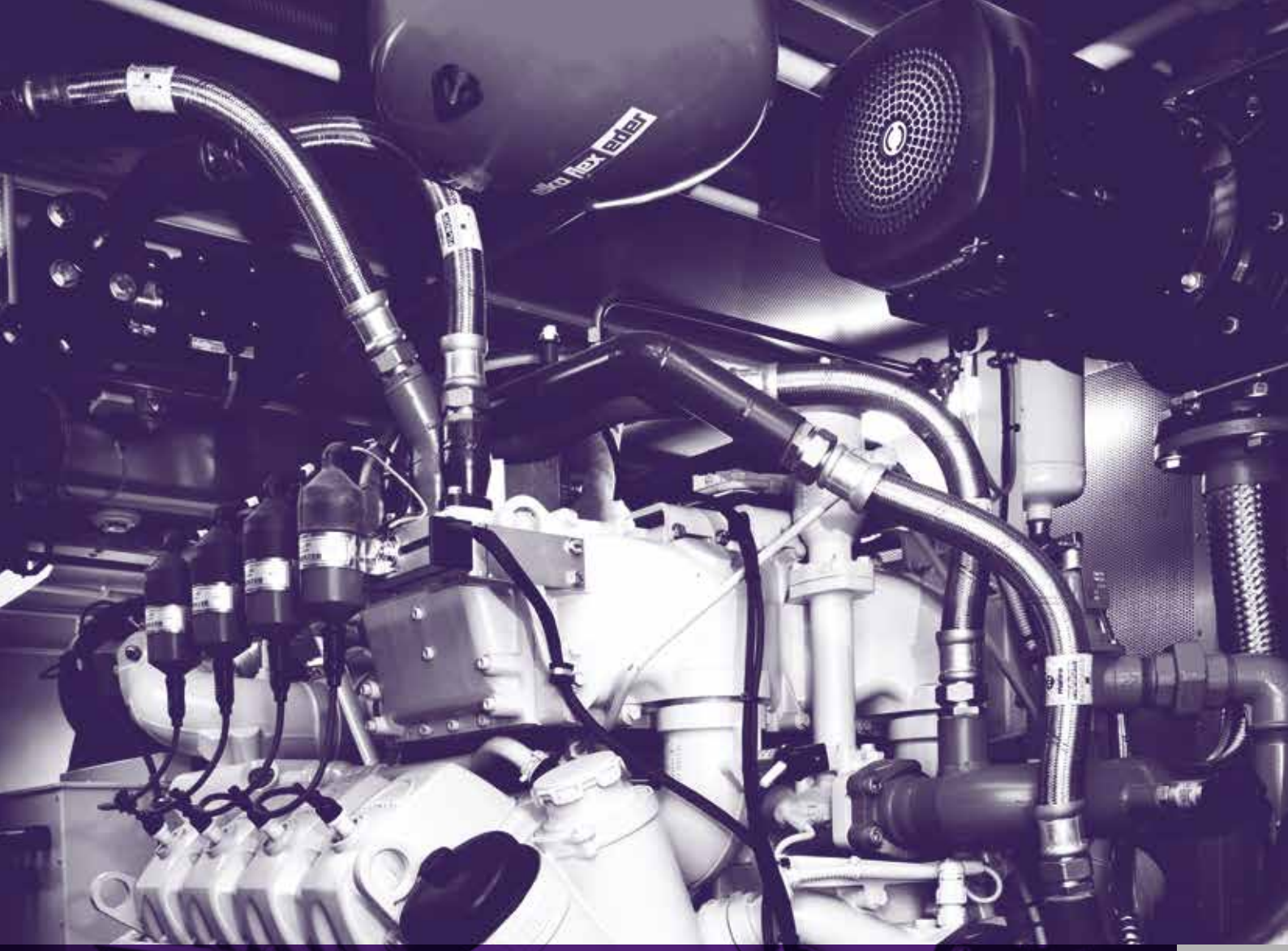
With plants typically located close to the end user, energy transportation and distribution losses are minimised, significantly improving efficiency and thus reducing total costs. In fact, for a typical engine working at 80% efficiency, users can achieve an average 40% reduction in utility bills – simply by self-generating energy. What's more, sites are able to significantly reduce emissions and maximise their environmental credentials, demonstrating a true commitment to sustainability.

However, with a whole host of CHP systems available – each designed for different applications, gas types and input fuel volumes – specifying the right setup for your site is essential.

With more than a decade's experience in the planning, assessment, specification and installation of CHP equipment, CooperÖstlund works in close partnership with each of its clients to advise on the best solution.

Undertaking a comprehensive site analysis programme, engineers firstly scrutinise the required energy outputs, feedstock regularity and on-site applications, before advising a precise engine size, type and manufacturer.

Rather than a 'one-size-fits-all' solution, this bespoke approach means that each site will operate at optimum efficiency – delivering the maximum possible value. Simple, comprehensive, effective.



“Thanks to CooperÖstlund, I was able to source, install and comission a 250 kW engine within six weeks. Now fully operational, the facility generates more than £550,000 revenue every year.”

Robert Greenow, director,
BIOG - UK

INSTALLATION AND COMMISSIONING

Whether a single CHP unit or turnkey power generation facility, CooperÖstlund is perfectly placed to deliver the complete site solution – from initial proposal through to ongoing maintenance provision.

As an independent expert, CooperÖstlund works with the world's leading CHP equipment manufacturers. Rather than settling for a 'one size fits all' solution, this allows project planners to take business type, site size and energy requirements into close consideration, before advising a solution to precisely meet energy needs – not just for now, but for the future.

Alongside offering support and advice during project planning and site specification stages, CooperÖstlund's field engineers are fully-qualified to commission gas engine equipment, ensuring your site meets the highest levels of British Standards and providing a single point of contact throughout the whole process.

So, regardless of project scope, CooperÖstlund can provide the consultancy and advisory services to deliver the perfect project. Right first time – making energy easy.

CASE STUDY

Mrs Temple's Cheeses

PROJECT	LOCATION	INPUT	OUTPUT
Copys Green Farm; on-site AD facility	**Wells-Next-The-Sea, Norfolk**	**Whey, cow slurry, fodder beet and maize silage**	**170 kW electrical and 198 kW thermal energy**

As part of a diversification venture for their 230 ha dairy farm, Dr Stephen Temple and his wife Catherine made the decision to launch a luxury cheese brand. From Bingham Blue and Walshingham, to Mozzarella and Wighton, Mrs Temple's Cheeses is now renowned nationwide as one of the UK's finest artisan producers.

With sales increasing every year, cheese production has quickly become a key source of revenue. However, with a large volume of whey generated, combined with cow slurry, fodder beet and maize silage from the farm's wider operations, waste volumes and disposal costs have also continued to escalate.

Dr Temple therefore decided to invest in an on-site anaerobic digestion (AD) facility, which would turn this waste into methane gas via the natural degradation of organic waste. Using a CHP engine, this gas could be turned into renewable energy and used to power the farm – driving down both energy and waste management costs.

Getting it right from the outset was important, but the project didn't run as smoothly as expected. The AD plant wasn't operating effectively, which saw energy production and return on investment figures drop. After researching specialist CHP advisors, Dr Temple came across CooperÖstlund – the UK's leading gas engine specification and maintenance expert – who reviewed the site and advised a more effective solution.

By taking waste volumes, feedstock type and energy requirements into consideration, CooperÖstlund recommended removing the existing biogas engine and replacing it with a more efficient alternative.

The results speak for themselves:

- The replacement engine is capable of generating nearly 1,000 MWh energy every year, compared to the 110 MWh produced by the old system
- Renewable power is now used to heat the dairy, farmhouse and other buildings, as well as warm the cows' water and pasteurise the AD digestate
- Additional energy is exported to the grid, generating a return of £220,000 every year (£600 every day)
- Predicted ROI for the system is less than ten years, making the project hugely beneficial from both a financial and sustainable perspective

In a short space of time, the AD operation has transformed. Dr Temple has completely eliminated organic waste, while becoming self-sufficient in terms of energy overheads.

"Thanks to CooperÖstlund, our AD site is now generating more than £600 every day – a complete transformation. Their knowledge, expertise and creative thinking were a critical part of site development, helping to deliver the perfect solution for our requirements – we can't thank them enough!"

"Thanks to CooperÖstlund, our AD site is now generating more than £600 every day"

Dr Stephen Temple, co-owner
MRS TEMPLE'S CHEESES

MAINTENANCE AND SERVICING

From routine servicing and ad-hoc maintenance support, to full CHP overhauls, CooperÖstlund provides the complete gas engine servicing and maintenance solution. With a highly-trained team of skilled engineers operating nationwide, each project is treated with the utmost care, attention and expertise.

CooperÖstlund understands the importance of keeping engines up-and-running, assuring an industry-leading call-out response time of less than four hours. This prevents unnecessary downtime and thus minimises financial loss – ensuring the best possible return-on-investment.

Alongside offering 24-hour cover and dedicated staff based on-site, CooperÖstlund also provides a comprehensive remote maintenance solution. This enables engineers to keep a close eye on engine performance, gas quality, temperature and power output – providing the opportunity to recalibrate equipment, fine-tune carburation and even send out engineers to replace faulty parts, if necessary.

For more comprehensive overhauls – such as major services or extensive refurbishment projects – CooperÖstlund's Northamptonshire headquarters boast state-of-the-art engineering facilities; allowing engines to be taken off-site and worked on in a safe and secure environment – minimising unnecessary site disruption.

With an established reputation for delivering results on time and to budget, CooperÖstlund is your perfect partner for engine maintenance services.

ROUND THE CLOCK COVER

NATIONAL SERVICE TEAMS

REMOTE MONITORING

"CooperÖstlund is a company that simply gets the job done. They identify a precise engine solution for your project's needs and ensure it is delivered on time, expertly installed and ready to go."

Pavel Sazema, technical specialist,
BIOGEST LTD

COOPERÖSTLUND

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