Combined Heat and Power
Take control of your energy
with heat and power on-site
The Power of CHP

Powering Sustainability
As an efficient source of heat and power, CHP units provide on-site flexible energy for the long term, helping drive sustainable growth.

Powering Performance
Using CHP helps your organisation reduce energy spend, enhance operational efficiency and supply electricity and heat directly on-site.

Powering Resilience
Decrease your reliance on the grid with CHP. Minimise the risk of disruption to your business and take control of your energy.
How CHP can help your business

Amid rising global energy demands and pressure on the grid, more and more businesses are implementing on-site generation such as cogeneration. As an efficient technology, CHP allows you to benefit from reduced energy costs and minimises your dependency on the grid.

With a CHP unit, you generate electricity on-site – and recover heat from the process for use on your estate, giving you a resilient and cost-effective energy source for your business.

CHP is a well-established and proven technology, suitable for any organisation which requires both power and heat.

Whether you’re designing a new building, replacing or reviewing a boiler plant, or looking to enhance your energy efficiency; CHP can help your business cut costs, reduce grid consumption and help you to take control of your energy security.

Take control of energy with heat and power generated on-site

As a business, your focus is on meeting your customer’s needs by delivering great products and services. This has to be done in an efficient way for you to be successful. Having secure, flexible and affordable energy makes this challenge easier to meet.

**How CHP can help your business**

| **40%** | CHP can reduce energy costs by up to 40% |
| **2-3 years** | CHP units typically achieve payback within 2-3 years |
| **2.5MWe** | CHP units range in size up to 2.5MWe, with multiple units for more capacity |

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Your CHP energy pathway

At Centrica Business Solutions, we offer an end-to-end solution – helping you move rapidly from an initial idea to on-site generation, in just a few steps.

Discover and diagnose
Our experts begin by working to understand your business objectives, energy profile and challenges. By completing an audit of your estate and ambitions, we diagnose opportunities for action and look at the best CHP solution.

Identify opportunities and plan
Our experts generate your bespoke proposal, working with you to prioritise scope and create an implementation path that meets your objectives.

Design
Our design team work alongside you to assess feasibility and refine the technical specification and commercial solution.

Finance
We can provide direct or 3rd party financing and support your organisation in building a business case for CHP.

Build and deploy
Your CHP system is built, tested and integrated into your existing energy estate. All works are conducted by our industry-leading construction and project teams and project managed to minimise disruption.

Operate and maintain
Post go-live our operation and maintenance team continue to proactively monitor all components, ensuring safety and compliance.

Optimise
We pro-actively monitor assets and recommend energy estate improvements, continuing our support and advice as your business develops.
Benefits of CHP

1. Enhance site resilience
   Reduce your reliance on the grid and minimise the risk of operational failures from energy interruptions by generating electricity on-site.

2. Reduce energy costs
   Generate electricity at around one-third cheaper than national supplier prices – and save on other costs by utilising the heat produced in the process.

3. Be more energy efficient
   CHP engines are almost twice as efficient as traditional generation, helping to cut energy consumption and further improving operational efficiency.

4. Be a sustainable business
   In addition to reducing consumption, CHP can also reduce NOx emissions and help meet BREEAM requirements when designing new buildings. As an accredited BIM (Building Information Modelling) manufacturer, we can help visualise a CHP project from the very beginning.

5. Minimise planning risks
   With our 3D scanning capability, we can create a digital model of your facility with pinpoint accuracy to 1mm. This level of accuracy streamlines the installation of CHP equipment by avoiding potential obstacles, saving time, reducing project costs and minimising risks.
How CHP works

CHP converts a single fuel into electricity and heat for your business, at the point of use, by means of a single process.

1. A single fuel for power and heat

Providing almost continuous operation, a CHP engine requires only a single fuel – typically gas – to function, simplifying your infrastructure requirements on-site.

2. Electricity for your site’s demands

An engine, coupled to an alternator, generates power. This generated power is converted into usable electricity to meet on-site demands.

3. Captured heat available on-site

Simultaneously, heat is recovered from the engine exhaust, jacket and water/oil cooling circuit. The heat is then made available for redistribution on-site.
Green Gas and CHP: A low carbon option

Centrica Business Solutions is constantly raising the bar on delivering low carbon solutions. We now offer a Green Gas Certificate package which enhances carbon emission savings for CHP, driving down Scope 1 emissions, while continuing to benefit from energy spend savings.

You can choose our CHP with Green Gas Certificate solution with or without including your gas supply:

- **CHP and Green Gas Certificates option**
  Green Gas certificates sit alongside your existing natural gas supply offsetting the carbon associated with running your CHP.

- **CHP and Green Gas Supply option**
  Our Green Gas Supply Contract comes with Green Gas Certificates built in.

**Is it right for you?**
We offer flexible options to suit your carbon goals and budget. You can choose a service to match the life of your CHP. We can also offer a service to blend in other carbon offsets. It can sit alongside your current gas supply or as an integrated gas supply and GGC package.

**Is it right for you?**
Our Green Gas supply contract comes with Certificates included. Certificates are procured through the lifetime of the contract and costs are reconciled on an annual basis. Taking gas supply and CHP together means simplicity, we handle it all.

We offer flexible options to suit your carbon goals and budget:

<table>
<thead>
<tr>
<th>Carbon neutral</th>
<th>So you can benefit from CHP cost savings without increasing your carbon footprint.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon target</td>
<td>Match Green Gas Certificate volume with your internal carbon targets.</td>
</tr>
<tr>
<td>Zero carbon*</td>
<td>Offset carbon emissions from all of your CHP gas input.</td>
</tr>
</tbody>
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*GGCs are zero carbon in scope 1 carbon reporting. They do have lifecycle emissions which are to be included in Scope 3 (1.25gCO2/kWh)
Planning and design of your CHP solution

After a site visit, we engineer a detailed structural and electrical design customised to your site and energy needs. We design a system layout, schematic and generation estimate. To determine just how much money you could save depends on the suitability of your site.

As part of planning your solution we will:

- Discuss your goals and requirements
- Review your site and electricity usage
- Perform a pricing and benefits analysis
- Present a short proposal

Evaluating your energy bill

The first part of our CHP evaluation process is to analyse your energy consumption and spend over the course of the past several electricity bills from the utility company.

This information is used to design a CHP system that will deliver electricity savings by offsetting a certain percentage of your grid consumption with power instead.

This percentage will vary from site to site and depends on several factors:

- System size installed
- Amount of sunshine your site receives
- Your energy consumption

This analysis of your energy consumption and spend will not only allow us to design a CHP system specific to your site’s needs, but also determine if there are any energy efficiency measures you can take for even further optimisation.

Developing a bankable CHP solution

After the analysis of your site viability, utility bill, and energy usage, our CHP system designers and engineers tailor your system.

You will receive a proposed design of your system that showcases estimated system production, the system size, and components that comprise the system. Our team determines the opportunity for CHP on your site, selects the optimum size of CHP unit, and gives you an accurate estimate of what the CHP will produce. You can be assured of maximum return on investment and will be able to accurately forecast your energy spend.

Your designed system:

1. Maximises your available space for CHP
2. Maximises energy production based on your available options
3. Uses best-quality Tier 1 components that are guaranteed to perform
Financing that suits your business

To give you the flexibility you need, we offer a number of different ways to finance CHP:

**Discount Energy Purchase (DEP)**

DEP is a fully funded, flexible form of financing – making it a route to the benefits of CHP operation, without the need to invest capital.

We fund, supply, install, operate and maintain the equipment ourselves – and you pay a fixed unit rate (with indexation) for the electricity generated across the lifetime of the asset. At the same time, the heat generated by the CHP is provided without charge.

**Capital Purchase**

With a Capital Purchase, you pay for the CHP and receive all the benefits directly. Payback is typically 2–3 years, and the savings you generate can be invested elsewhere in the business.

With this option, you are free to source financing of your own or to use internal funds.

You get 100% of the savings with a capital purchase.

**Energy Services Agreement (ESA)**

An ESA is a ‘pay for performance’ solution. With this option, you can implement an energy efficiency project without any capital outlay – and receive guaranteed performance levels in return for a fixed rate of payment, spread across the lifetime of the contract.

**Optional Ownership Agreement (OOA)**

Our OOA option delivers immediate energy savings with the option of moving OPEX spend to CAPEX. Energy solutions are delivered through our DEP financing structure, but you have the flexibility to invest more into the project. The more money you invest, the lower your DEP (p/kWh) fixed rate. Post year one you can reassess your investment, and increase if you prefer, further reducing OPEX spend.

Deploying your installation

Ensuring your new solution is installed with the highest safety standards and is built correctly to support your business objectives.

Our project managers will work with you to develop an installation plan so that we do not disrupt your business operations.

Our team safely and efficiently installs the CHP on-site. We follow a site QA and commissioning process and perform compliance checks to ensure quality workmanship.

Our highest-quality technology offerings, experienced project management, and professional engineering and design deliver maximum energy savings from your CHP system for years. Warranties and guarantees provided by Centrica Business Solutions ensure a worry-free investment.
Delivering a full-service solution

At Centrica Business Solutions, every CHP installation is customised to our customer’s business needs – optimising the return on your investment.

We have over 30 years’ experience in designing and engineering custom CHP solutions that maximise energy production and deliver savings.

End-to-end solution

To optimise your solution, we offer an end-to-end CHP journey. This starts with a review of your goals to confirm that CHP is an appropriate on-site energy solution for your business – from solution development to proposal to construction.

Along the way, we maximise the cost-efficiency of the proposed CHP system – from designing a bespoke solution that minimises disruption and fits seamlessly alongside existing or planned infrastructure, making recommended and agreed upgrades along the way.

Future performance

Once your cogeneration solution is installed and operational, you can visualise and monitor energy consumption and usage. PowerRadar is our energy management software platform that gives you complete visibility into power generation, savings and performance.

Worry-free investment

Our specialised operation and maintenance team ensures that your CHP system is always up and running at optimal conditions.

Our in-house operations team continually monitors your Cogeneration system and addresses issues promptly, in order to ensure that our performance and availability guarantees are always met.

We can remotely fix faults and start units or send out our specialised field engineers to quickly carry out any maintenance. We have over £2M of spares in stock ready for next day delivery to minimise down time.

Performance visualisation with PowerRadar

PowerRadar is our industry-leading energy management software platform that will sit at the very heart of your energy strategy.

PowerRadar brings the intelligence and visibility you need to understand and analyse your entire energy estate, providing a single view to visualise and track performance.
Why choose Centrica Business Solutions?

Centrica Business Solutions helps you turn energy from a cost and potential business risk into a source of sustainable competitive advantage.

We are the UK’s only CHP manufacturer which has global experience delivering CHP systems.

When you work with Centrica Business Solutions, you can rely on:

• Our capabilities as a leading CHP manufacturer, with a large fleet of operation and maintenance (O&M) technicians in the UK
• Our 30+ years experience in the sector, with more than 3,000 units manufactured and more than 700MW in operation globally
• The largest provider of small-scale CHP units in the UK
• Our advanced operating and monitoring equipment, which checks over 200 data points

We are part of Centrica plc, a 200-year-old FTSE 100 company with 28 million customers, mainly in the UK, Ireland and North America.

#1

UK’s only CHP facility with full design, build and testing capabilities

30+ years

Over 30 years of experience as a global pioneer of modern CHP technology

>700MW

Over 700MW of CHP across the globe that we continue to operate and maintain
Proven success with CHP

Energy savings at Alton Towers

Objective
The 550-acre Alton Towers site includes a conference centre, four hotels that can accommodate 2,500 guests, and Europe’s largest water park. Alton Towers was looking for a way to reduce energy consumption, provide energy savings and reduce utility costs.

Our solution
Acting as manufacturer, installer and service provider, we installed a CHP unit on-site, alongside the waterpark, generating up to 850kW.

With the CHP unit generating power at source, energy efficiency has increased to 80%. Because we funded the unit and installation, this saved the resort’s capital budget, allowing it to invest in customer-facing attractions. If there are any issues with the CHP unit, our support ensures they are dealt with quickly.
Objective
University Hospitals of the North Midlands (UHN) NHS Trust provides services to 900,000 people locally and 3 million people across the region. As part of its vision to be the most sustainable NHS trust in the country, it was searching for a cost-effective and sustainable means of producing energy.

Our solution
To help reduce electricity consumption and also provide heat to the hospital at a reduced cost, UHN installed a 1.2MW CHP unit from Centrica Business Solutions, along with a Premier Plus maintenance programme.

The unit is now saving the trust around £500,000 per year, which could pay for 17 full-time nurses.
End-to-End solutions

Our distributed energy products and services unlock the potential of your business to power performance, resilience and sustainability. As part of Centrica plc, we can leverage the capabilities of the Centrica Group.
Complement your energy pathway with these solutions

Battery Storage
A resilient source of energy for your business is crucial. You need to know that whatever happens outside the gates, you’ve got the means to keep the lights on. Businesses are facing an increasingly volatile grid, rising energy demand, limited site capacity and intermittent renewable generation making Battery Storage an important part of any energy strategy.

Our multi-purpose energy storage solutions are technology-agnostic, utilising lithium-ion or flow batteries depending on your requirements.

Energy Insight
Operational efficiency and cost reduction have never been more important, making visibility into energy usage and the ability to proactively manage energy essential. The more you know about your energy, the better you can manage it.

Our Energy Insight solution delivers unparalleled visibility into your entire energy estate – from the site, down to device-level.

Improve your business performance and drive your energy strategy forward through actionable, real-time energy intelligence from your devices and integrated utility meters. Effectively and holistically manage consumption, reduce power waste, improve operational efficiency, lower energy costs, prevent costly downtime, and create a comprehensive energy strategy.

IET
Centrica sponsored the Institution of Engineering and Technology technical documentation on energy storage

49MW
Size of our market-leading energy storage facility operating at Roosecote, UK

1MW
Size of the battery involved in our Cornwall LEM blockchain project

10%
Reduction in energy consumption by a 164-acre satellite communications

3 weeks
ROI for a global leader of UV inkjet ink development and manufacture, who reduced their annual energy costs by £17,000

£211k
Annual savings from a global building materials supplier through better understanding of their energy usage
About Centrica Business Solutions

Partner with us and build your energy pathway to becoming a more sustainable business.

Our role is to understand your business and identify how our solutions can help you achieve your objectives.

Our unique approach brings together the expertise of our people and the power of distributed energy, helping organisations across the globe to balance economic success with environmental responsibility.

Our energy experts work with you to identify opportunities, develop plans to realise them, and provide full service support.

Building your Energy Pathway to the future.

centricabusinesssolutions.com