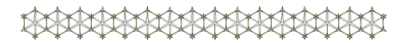
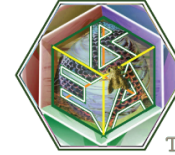


# Base Power

Recommended by:



BEEHIVE ENERGY  
LTD.

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## Getting value from CHP

BasePower Introduction  
Autumn 2015

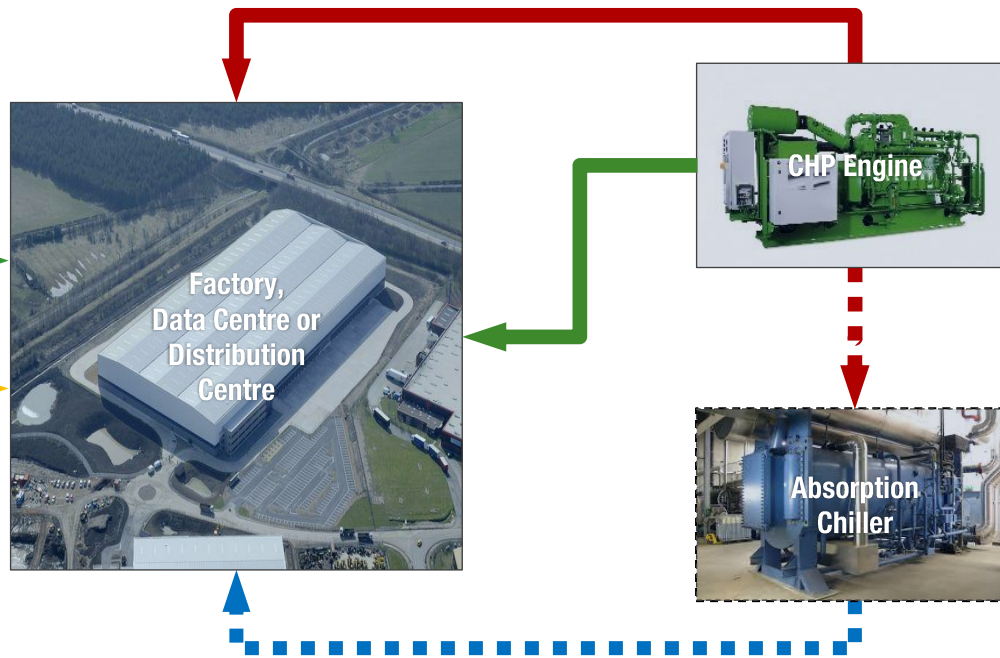
## **BasePower CHP can deliver energy cost savings in excess of 15% with no capital outlay**

- **Food producers, manufacturers and other high energy users now operate in highly competitive global markets where low operating costs are paramount. Despite recent relief, projections for power prices are upwards.**
- **BasePower develops, funds, delivers and operates Combined Heat and Power (CHP) units using Natural Gas.**
- **These generate and supply electricity, heat and/or cooling on-site. This lowers energy costs and reduces carbon emissions.**
- **Our units are containerised for rapid deployment and simple integration into your facility.**
- **We fully fund the plant Capex and sell you electricity and heat at guaranteed discounts to your grid prices.**
- **Our team has exceptional experience, having delivered over £200m of distributed energy projects in the UK.**
- **No other intervention – marketing, NPD, cost cutting – delivers such significant economic benefit from so little effort as CHP.**
- **You could have a strong case for CHP at your facility if you spend £800k annually on energy.**

# How it Works

## BasePower Natural Gas CHP Schematic

Before: the customer takes electric power for plant and gas for heat from their respective grids



Gas from Grid

Heat

Electricity

Chilled water (optional)

BasePower: installs a gas-fired CHP generator to supply baseload power direct to the factory

Heat: is supplied to the factory as steam and hot water

Alternatively: the heat is converted to chilled water for use in refrigeration

The Customer: pays BasePower for resilient power and heat at below market price, tops up from the grid

# Benefits to the Customer

## Financial

- 10% power cost and 50% heat cost reduction typical
- Net 15% reduction in cost of energy supplied typical
- Avoidance of grid capacity expansion costs
- True off-balance sheet solution

## Operational

- Simple, containerised integration
- Lower loads on heat assets
- Specialist development, install and O&M provided by BasePower
- Can be expanded or upgraded to operate off-grid

## Environmental

- At-source carbon savings
- Meets CRC/CCA/ESOS\* obligations
- Savings increase if CCAs unwound
- Merits Plan A 'Gold' status and other supplier recognition



MEETWAARDEN		NETPARALLELBEDRIJF		P_52	
761 kW				11/08/14 15:19:05	
CILINDERTEMP.					
1	5.45	AANVOERTEMPERatuur	76.0	°C	
2	5.45	RETOURTEMPERatuur	65.2	°C	
3	5.45	NAAR KOELER	65.0	°C	
4	5.45	KOELWATERTEMPERatuur	87.4	°C	
5	5.45	KOELWATERDRUK	1.48	bar	
6	5.45	OLIETEMPERatuur	81.5	°C	
7	5.45	OLIEDRUK	3.88	bar	
8	5.45	ELEKTRISCH VERMOGEN	761	kW	
9	5.45	MENGSSELTEMPERatuur	59.7	°C	
10	5.45	LAADDRUK	2.46	bar	
11	5.45	POSITIE GASMENGER	27.1	%	

F3 MEETW. BIJ OPTREDEN STORING



*\*Carbon Reduction Commitment, Climate Change Agreement, Energy Savings Opportunity Scheme*

# Benefits case examples from two of our projects

## Bottling Plant – Power and Heat

Essex bottling plant with existing power load of 3MVA plus 1.5MWth of gas-fired heat for process steam and wash-down

BasePower CHP: 2MWe generator will provide baseload power topped up by the grid. Heat integrated into the existing hot set via a new waste heat boiler

Acoustic enclosure, and all equipment installed into footprint of redundant HFO storage tank

- Power Supplied: 2.0MWe
- Heat Supplied: 2.0MWth at 390°C 90°C
- Savings Y1: £380,000
- Savings Y1-Y15: £7,300,000
- Carbon Benefit: 3,560 tonnes CO2e pa

**£7.3m savings over project life**

## Cold Food Prep – Power and Cooling

2 adjacent sites, South of England with combined load of 2.5MVA during Summer, of which approximately 1MVA drives the cooling system

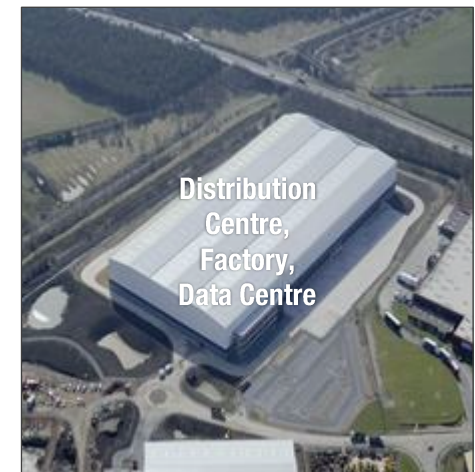
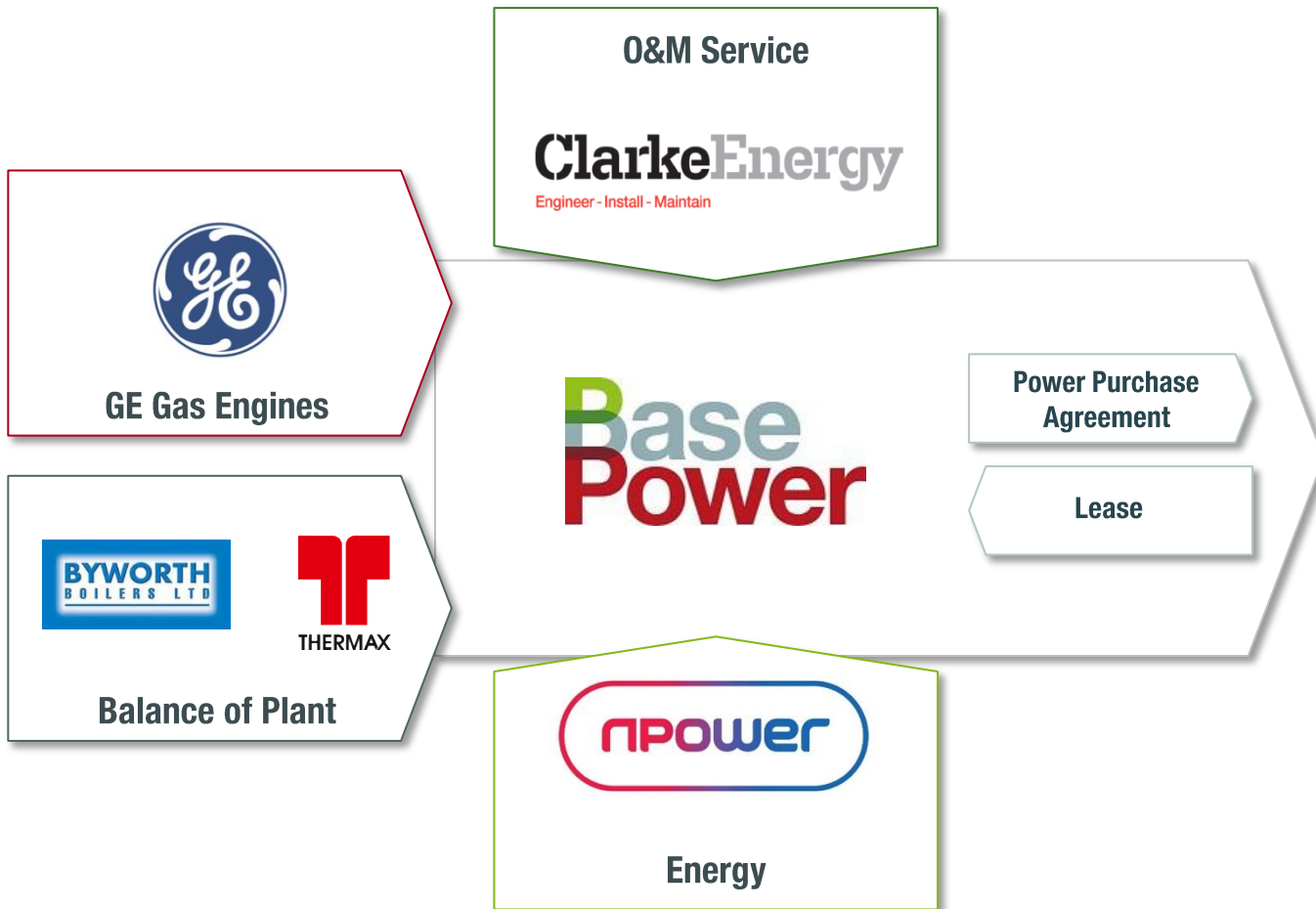
BasePower CHP: 1.5MWe generator with -5°C absorption chiller which will reduce cooling system power by 270kWe

Hot water supplied for washdown as required  
Scheme installed behind the main production building with acoustic protection

- Power Supplied: 1.5MWe
- Cooling Supplied: 1.5MWth displacing 270kWe
- Savings Y1: £320,000
- Savings Y1-Y15: £7,100,000
- Carbon Benefit: 1,160 tonnes CO2e pa

**£7.1m savings over project life**

# BasePower develops, finances and operates sustainable energy projects from a world-class supply chain



# Our Build-Own-Operate model aligns our interests with yours better than any other commercial arrangement

## Our Customers

- are focused on returns from core business improvement before energy
- must minimise operating costs in a competitive market
- are incentivised to purchase as much CHP product as possible where these displace higher-cost alternatives

## BasePower

- is prepared to take risk in energy project development and operation
- seeks modest returns on our ownership of the CHP unit
- is incentivised to maximise power and heat sales to our customer
- ensures this by:
  - matching supply to demand through careful design
  - maximising efficiency and reliability in supplier choice
  - ensuring fast response in operation and maintenance support

# We operate a core team supported by an array of retained advisors



**Dan Poulson – 10 years in Anaerobic Digestion and CHP, £100m total financing. 8 biogas CHP projects for Tamar Energy and Biogen**



**Robin Hardy – 5 years operational improvement to energy, water and onsite generation facilities at food producers in UK and abroad**



**George Fowkes – 15 years project development in power and infrastructure, £130m total financing. Interim CEO of UK's first food site biogas CHP project. 5 other biogas CHP projects**

- Consulting Engineering
- Power and Gas Grids
- Planning and Permitting
- Energy Trading

- Accounting and Control
- Project Mgt and CDM
- Legal



# Some relevant projects



- 500kWe biogas CHP at RF Brookes, Newport



- 1,500kWe biogas CHP at QV Foods, Holbeach



- 3.5MWth boiler fuel switch on milk bottling site
- Load assessment for 5MWe CHP on large UK dairy



- Support to NHS Trust for procurement of Natural Gas CHP for new hospital (ongoing)

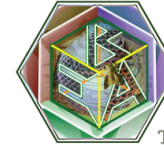
# We have unrivalled experience in energy projects in the food and related sectors

## Past and present projects for:

KeldaGroup



Recommended by:



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