



S COT HEAT & POWER
BEST IN BIOMASS

ELECTRA THERM[®]
THIS IS SMART POWER[®]



WASTE HEAT
170°-252°F / 77°-122°C



FUEL-FREE kWe
COOLING BENEFITS
ADDITIONAL THERMAL
USAGE
INCENTIVES

POWER+
GENERATOR™

Convert your waste heat into power

Showcase



The Royal Highland Show – Edinburgh 2016





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Energy use in buildings is a major contributor to CO₂ emissions and the supply of heat for space heating and hot water is associated with approximately 16% of total UK CO₂ emissions (CCC, 2010). The role and responsibility of the building services engineer in meeting these challenges is therefore very significant.

Combined heat and power (chp) has been recognised as a technology that can reduce CO₂ emissions. It can also be cost-effective to implement in many applications. The greater efficiency of fuel utilisation will also help improve energy security, chp thus has the potential to help reduce the levels of CO₂ released into the atmosphere, decrease our dependency on fossil fuels & stabilise energy prices.

The energy efficiency benefits obtained with a chp system will still be needed even if the fuels used in the future are low carbon, as such fuels will be in short supply and will also have environmental impacts. Maximising the efficiency of utilisation of renewable fuel will remain an important part of the case for chp in the future.

Introduction





WHAT IS WASTE HEAT?

Waste heat is an untapped resource for sustainable energy. Waste heat is most commonly generated by fossil fuel combustion and vented to the atmosphere through smokestacks, exhaust, radiators or cooling towers.

WHAT IS WASTE HEAT TO POWER?

Waste heat to power (WHP) refers to capturing waste heat and converting it to electricity with no additional combustion or emissions. Today's WHP systems like the Power+ Generator™ can cost-effectively make use of an overlooked clean energy resource by generating power and offsetting cooling costs.

WHAT ARE SOURCES OF WASTE HEAT?

Waste heat is a byproduct of most manufacturing processes, power generation systems, and heating and cooling systems. ElectraTherm's customers make clean electricity from a wide variety of heat sources, such as:



Stationary Engines



Biomass/Biogas



Boilers & Process Heat



Flares



Cooling & Radiators



Waste Water Treatment

POWER+

GENERATOR™

ElectraTherm's Power+ Generator™ produces fuel-free, emission-free electricity from low grade waste heat. The Power+ Generator is fully packaged with outputs up to 110kWe for distributed power generation.

FEATURES INCLUDE:

- Zero Emissions
- Zero Fossil Fuel Requirements
- Ease of Installation and Maintenance
- CE Certified
- Modular and Scalable
- Automated Control System
- Remote Monitoring
- Low Maintenance
- Robust, Twin Screw Expander Power Block
- Single or Dual Heat Stream Input
- Radiator Replacement Option

CAPTURES HEAT. GENERATES POWER.

THIS IS SMART POWER®

Product Features

How it Works

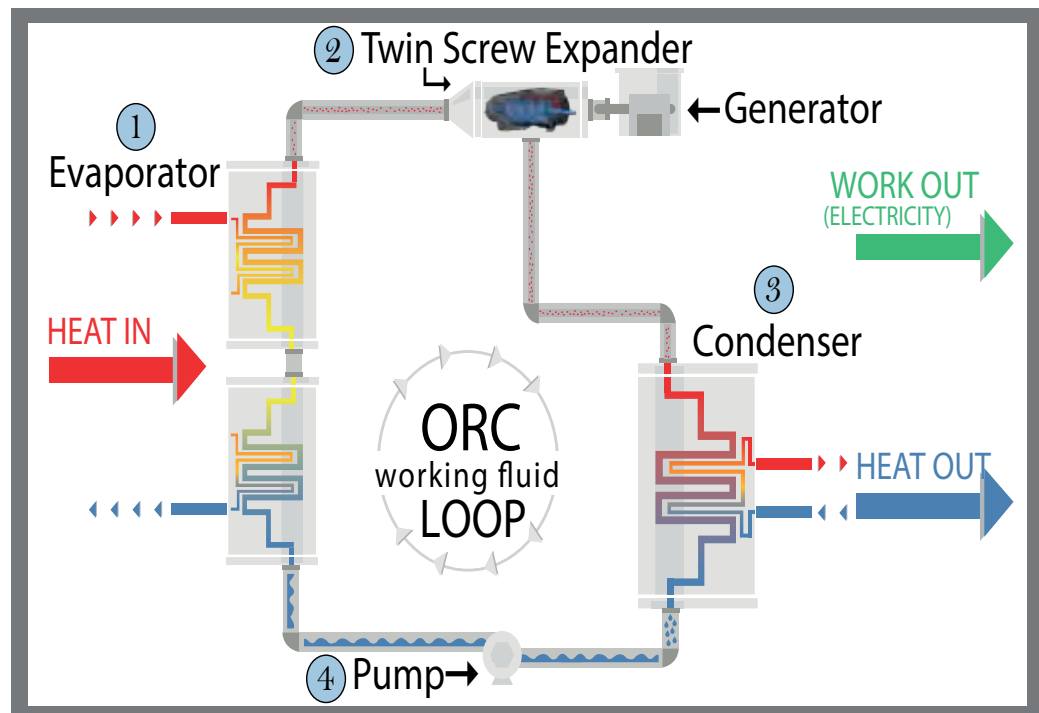


HOW IT WORKS

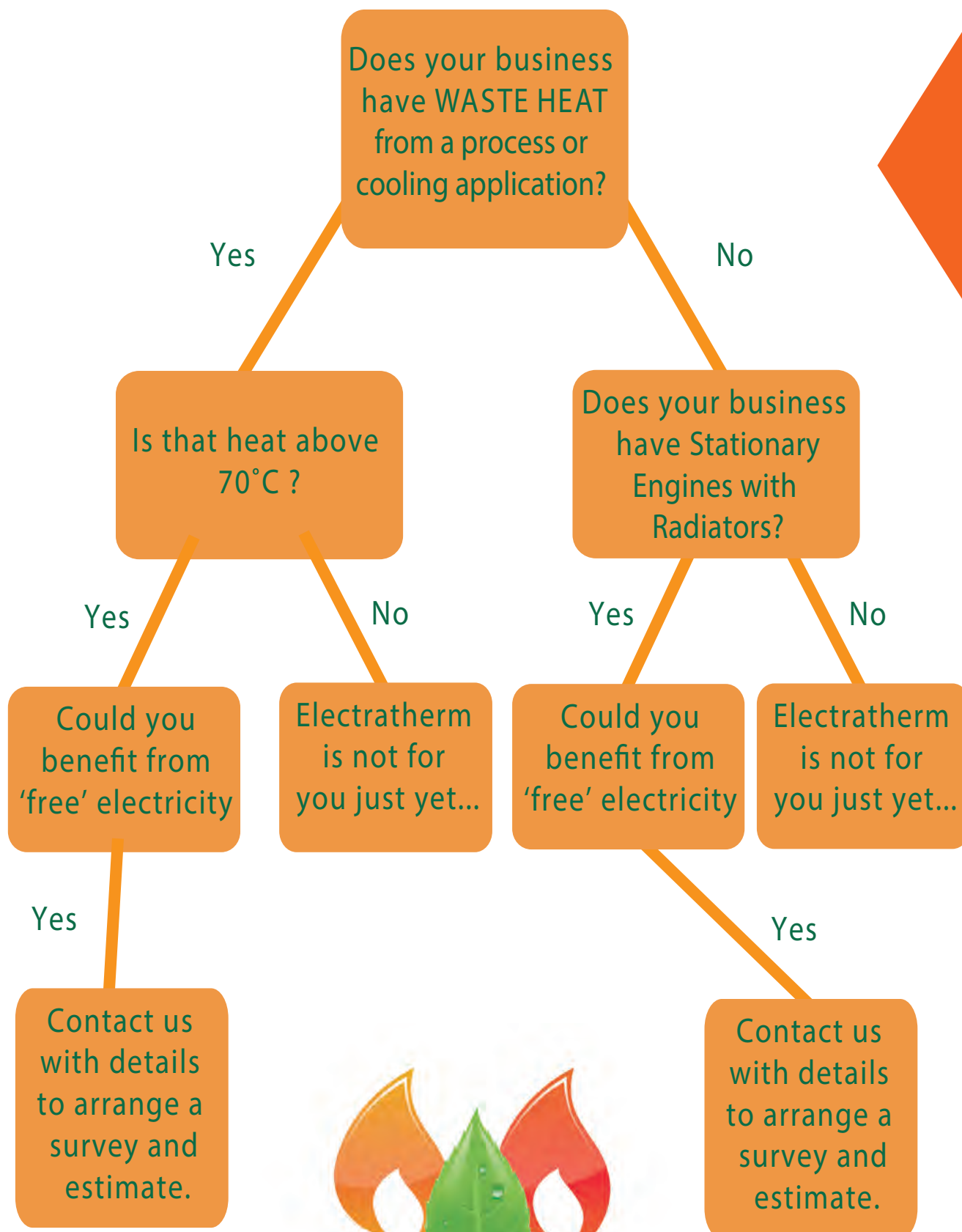
ElectraTherm's waste heat-to-power system uses a closed loop Organic Rankine Cycle (ORC).

STEPS IN THE PROCESS

1. Working fluid is pumped to higher pressure and transferred to the evaporator.
2. Heat captured by the evaporator boils the working fluid into pressurized vapor.
3. The vapor flows through the twin screw expander, spinning an electric generator to produce power.
4. The vapor is cooled and condensed back into a liquid in the condenser to repeat the cycle.



Is it for you?



COT HEAT & POWER

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Example Applications



Waste Elimination



Concentrated Solar Thermal



Cooling & Radiators



Process Heat



Biomass/Biogas



Stationary Engines



Geothermal



Boilers



Flares



Oil & Gas



Waste Water Treatment

ELECTRATHERM'S POWER+ GENERATOR TM IS AVAILABLE
IN THREE DIFFERENT MODELS...

1. Power+ 4200 - up to 35kwe
2. Power+ 4400 - up to 65kwe
3. Power+ 6500 - up to 110kwe

...AND TWO DIFFERENT
CONFIGURATIONS:

Standalone



Turnkey

Configurations



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