

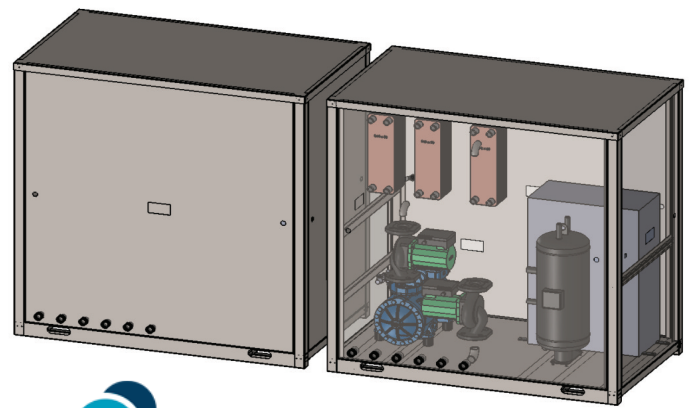
AN INNOVATIVE COMBINATION OF EXISTING TECHNOLOGIES DESIGNED TO REDUCE ENERGY USE & COST

The Green Thermal Energy-TWIN ENERGY PLUS Chiller Hot Water Generator (CHWG) represents an exciting development with regard to providing low energy cooling and heating for industrial, process and HVAC applications.

Combining proven technology with practical common sense engineering reduces energy costs and carbon emissions.

Historically we see the duplication of energy in many applications and industry sectors.

By this we mean that energy is used to provide cooling, but the valuable thermal energy that is produced as a by-product of the cooling process is simply rejected as waste into the atmosphere.



GTE-TWIN ENERGY PLUS

WHAT DO WE KNOW?

We know that the process of refrigeration is simply a means of transferring energy from one place to another.

WHAT DO WE DO?

We transfer valuable energy from cooling directly to waste and importantly we do not normally attempt to recycle this high cost waste energy from cooling.

WHAT CAN WE DO?

The GTE-TWIN ENERGY PLUS Chiller Hot Water Generator enables this waste energy to be recycled and used again on site to supply either a hot water or heating system.

Existing or new facilities can now benefit from significantly reduced energy costs by incorporating a TWIN ENERGY PLUS system into their installation.

In basic terms the GTE-TWIN ENERGY PLUS provides simultaneous cooling and hot water or heating outputs using significantly less energy than would normally be required.

For example if an application requires 100kW of cooling and also requires 100kW of energy to produce stored hot water i.e. total 200kW, the TWIN ENERGY PLUS will satisfy both requirements but will only require the input power to satisfy 100kW of cooling i.e. circa 30kW.

This is achieved by an innovative CO2 refrigeration system that combines both cooling and heating outputs; this system recycles the maximum amount of available waste energy to meet the required demand.

*Actual efficiency levels are project specific and will be detailed within a projects technical schedule

EXAMPLE: TE-160 UNIT

REFRIGERATION + HOT WATER 10°C-> 70°C

GLYCOL

Temp in °C	Temp out °C	Ref. cap. kW	Thermal cap. kW	COP Cooling	COP Total (TCOP)
-5	0	94	120	2.5	5.6
5	0	102	135	2.7	6.2
12	7	117	158	3.1	7.2

DELIVERING LOW ENERGY COSTS WITH AN INDUSTRY LEADING PAYBACK PERIOD

The unit produces simultaneous chilled water and hot water and its efficiency is measured using the Total Coefficient of Performance (TCOP)... **COOLING + HEATING ÷ INPUT POWER = TCOP**

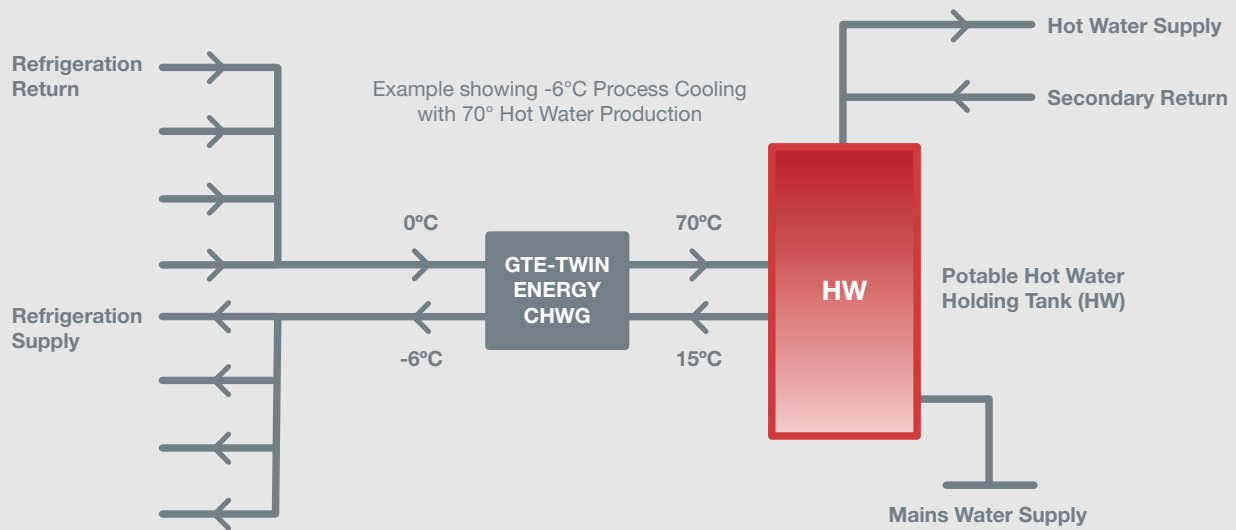
WHEN PRODUCING CHILLED WATER AT 5°C AND HOT WATER AT 70°C, TWIN ENERGY ACHIEVES A TCOP OF OVER 7.5 OR AN EFFICIENCY LEVEL OF OVER 750%

RETURN ON INVESTMENT CAN BE LESS THAN 1.5 YEARS*

TWIN ENERGY PLUS PROVIDES THE SPECIFIER/USER WITH A HIGHLY PRACTICAL COST EFFECTIVE METHOD OF REDUCING ENERGY COSTS AND CARBON EMISSIONS

AN EFFICIENT AND PRACTICAL SYSTEM PROVIDING COOLING AND SIMULTANEOUS HOT WATER PRODUCTION

LOW COST - LOW CARBON - PROVEN - PRACTICAL



Temperature Range
-30°C to 10°C

Temperature Range
40°C to 80°C +

GTE-TWIN ENERGY PLUS

The GTE-TWIN ENERGY PLUS UNIT allows the cooling input energy to be used twice, but importantly the recycled second time use energy provided for hot water or heating production is virtually FREE and virtually ZERO CARBON.

- ✓ Reduce energy use by 50% if the production/storage of chilled water and hot water or heating is required
- ✓ High efficiency with total heating & cooling input power being comparable to that required by a standard cooling only system*
- ✓ Retrofit into existing sites
- ✓ Specify for new installations
- ✓ Install lower capacity electrical supplies
- ✓ Cool process, storage & manufacturing systems
- ✓ Cooling range from 35°C to -15°C
- ✓ Satisfy HVAC cooling demands
- ✓ Produce 65°C energy for heating or hot water
- ✓ Replace direct electric hot water production
- ✓ Replace gas fired hot water production
- ✓ Supplement solar thermal hot water production
- ✓ Produce virtually FREE recycled energy
- ✓ Produce virtually ZERO CARBON recycled energy

Even when there is no demand for heating or hot water the GTE-TWIN ENERGY PLUS system can be specified to efficiently provide chilled water or direct cooling.

Depending on the particular requirements of each application the unit can be configured to recycle 100% of a cooling demand or it can be configured to reject heat to atmosphere as per a conventional Air-Cooled Chiller or Condenser.

The GTE-TWIN ENERGY PLUS provides a practical and proven means of producing cooling and hot water or heating 52 weeks of the year.

RECYCLED ENERGY COMBINED WITH RENEWABLE ENERGY

The practical potential for both new and retrofit-replacement applications means that the TWIN ENERGY PLUS is becoming an attractive alternative to expensive and high energy use direct gas and electric hot water production.

INNOVATIVE, PRACTICAL PROVEN & COST REDUCING

The second time use of recycled energy is now recognised as being of higher benefit & value than energy produced from renewable means.

Why accept waste when valuable rejected cooling energy can be recycled & used again on site by installing a Green Thermal Energy TWIN ENERGY PLUS system.

- ✓ Retail and logistics applications
- ✓ Food and Drink processing & production
- ✓ Chemical & Petrochemical processing
- ✓ Pharmaceutical manufacturing
- ✓ Plastics production & manufacturing
- ✓ Building services & Facility management
- ✓ Leisure, Hospitality and Hotels
- ✓ Healthcare and Hospitals
- ✓ Universities and Colleges

**Efficiency will be dependent on individual project conditions and requirements, an individual illustration can be provided with regard to capital cost, operational costs and return on capital, based on actual site specific information.*

Contact Green Thermal Energy now to discuss a current project or to discuss the benefits of using the GTE-TWIN ENERGY PLUS in the future...Call: +44 (0) 1253 685 145

For more information call: +44 (0) 1253 685 145 email: sales@greenthermalenergy.com visit: www.greenthermalenergy.com