

The Celtic Manor Resort



CASE STUDY

Project Details

Client: The Celtic Manor Resort Limited

Facilities:

- > Four hotel complexes totalling 554 guest rooms
- > Convention centre
- > 3 health clubs with spa facilities
- > 8 restaurants
- > 3 Championship Golf courses



Goals: Reduce hotel operating costs

Areas of demand:



Electricity - lighting and power for public areas, bedrooms and hotel facilities



Heat - hot water production for swimming pools, leisure facilities and space heating



Air conditioning systems - used to keep rooms and whole complex cool

Challenges

- Size and complexity of the site
- Seasonal energy demand and limited locations to install plant
- Machinery required a modular approach
- Internal plant location
- Exhaust outlet had to be invisible to guests

Solutions

Implemented: "EuroSite Power On-Site Utility Solution"

Installed

- 2 x 200 kilowatt combined heat and power systems (CHPs)
- Silent enclosures to minimise noise breakout
- Fan assisted exhaust system routed away from hotel complex

"The EuroSite Power solution has provided us with immediate cost and carbon emission savings over and above what was initially projected. We are delighted our partnership will continue to reduce our carbon footprint and allow us to continue to provide the best value to our customers for the next 15 years." **Russell Phillips - VP Facilities and Development**

Savings and Benefits

Forecast gross CO2 saved: 751 tonnes*



Forecast energy saving: £60,827*



2,174,960 kWh*

Forecast electricity generated by EuroSite Power On-Site Utility Solutions

2,579,90 kWh*

Forecast heat generation by EuroSite Power On-Site Utility Solutions

*Year 1 forecast savings. Contracts will run for 15 years.

About EuroSite Power On-Site Utility Solution



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The on-site utility model offered by EuroSite Power provides energy efficient solutions that produce electricity, heat, hot water and cooling by financing, installing, operating and maintaining complete cogeneration and cooling systems tailored to a customer's specific site requirements.

Benefits include:

- > Guaranteed, instant energy cost savings
- > No capital outlay means no equipment payback period
- > Overall reduction in operating costs
- > No operating expenditure for the equipment
- > An off balance sheet financial solution
- > Increased cash flow from day one
- > Further financial savings by reducing the costs of environmental taxation e.g. Climate Change Levy, CRC Energy Efficiency Scheme and EU ETS

Delivery of Solution

The Celtic Manor Resort were looking for a solution that would provide a discount against their import electricity and heat tariffs.

The Celtic Manor Resort chose to implement a EuroSite Power On-Site Utility Solution and signed a 15-year On-Site Utility (OSU) contract. The contract guarantees the resort a 15% discount against import electricity and heat tariffs, whilst providing a 50% discount on non-energy and carbon taxes for the duration of the contract.

We chose to use the standby-generator plantroom to install the CHP and suggested a heat-only solution. Given the odd shape of the plantroom, we opted for using two CHP units instead of one larger machine. This modular approach would allow the CHP systems to fit and provide the flexibility

needed to cope with the lower thermal loads in summer. Our system is based on two 200kW TEDOM Cento units fitted with silent enclosures to limit noise breakout to nearby the spa and guest rooms.

During the scoping phase of the project, EuroSite Power also identified that the site was experiencing issues in meeting its hot water requirements. EuroSite Power funded the installation of DHW plate heat exchangers, using the forecast CHP savings.

Reviewed in September 2017, actual system performance is greater than forecast, and as a result, The Celtic Manor Resort is currently outperforming initial savings projections. This is the product of minimal downtime, an efficient maintenance regime and optimised operation.

On-going service

EuroSite Power assumes all responsibility for the operation, maintenance and performance of all systems. We pride ourselves on being able to ensure continuity of supply and optimal functionality for all of our on-site solutions. EuroSite Power's maintenance programme includes the following services::

- > **A comprehensive helpdesk service**
- > **Strategic and preventive maintenance to enhance equipment reliability and reduce potential failures**
- > **Predictive assessments of the equipment to forecast maintenance work orders**
- > **Statutory maintenance to comply with specific legal regulations**
- > **Long term planning – a complete asset management program that tracks all major facilities**
- > **Regular reporting and annual review**
- > **Responsive fault call-out and efficient facility refinement**
- > **A committed collaboration that seeks to guarantee client objectives**

Contact us today

Set up a site assessment and start your energy cost savings.

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