green optimisation

Real benefits from site optimisation

case study

Any organisation operating an industrial or commercial site can now see tangible benefits by fitting energy Monitoring & Targeting systems (M & T). A major restaurant chain recently fitted two neighbouring sites with Green Optimisation M&T Systems in order to enable management to gain total visibility of site energy use.

The Green Optimisation (GO) package of M & T systems and services produces a number of diverse benefits and is now becoming acknowledged as being a key component of an organisations energy and environmental plan.

Garry Broadbent of Green Optimisation commented," M&T systems require robust reliable hardware and a well designed software platform," continuing, "our GO Energy Remote systems meets these requirements but it is our unique support service that can make real efficiencies for our clients. Our team is geared towards cost effectively working with clients to facilitate real achievable on-going savings, " noting," experience really does count in this area, our engineers provide practical input into site practice, they identify inefficient equipment and they constantly drive to identify new initiatives with the shortest return on capital."

Energy Monitoring and Targeting (M&T) is rooted in the principle that it is impossible to manage what cannot be measured. M&T techniques provide feedback on operating practices and identify the subsequent results that are yielded by energy management initiatives.

Green Optimisation (GO) M&T draws on the following principles:

Monitoring: data gathering to establish baselines and monitor resulting impacts subsequent to changes.

Targeting: identification of reduction targets based on past data.

Reporting: energy consumption analysis to make informed decisions on the measures required to meet targets.

When presented with this particular twin site restaurant project the Green Optimisation (GO) M&T team followed standard procedures & the GO disciplined two step approach in order to deliver the required results which would meet the clients energy reporting needs and objectives:

1. Site analysis and identification of main consumers
2. Identification of other variables (production, weather, schedule, etc.)

Once these steps are carried out the GO service is activated which turns raw information into cost and carbon savings:

Measure: data gathered automatically at regular intervals form both restaurants.

Define the baseline: design a basic model using all variables which acts as a template for the restaurants standard operations

Monitor variations: create visibility with regard to the difference between energy used/data measured and the baseline objectives, threshold targets and alarms are then activated if these baseline objectives are exceeded.

Identify causes: subsequent to identifying and verifying the variations above the baseline, the GO team identify related causes within the restaurant , whether these are positive (to be repeated and encouraged) or negative (to be eliminated).

Set targets: use the baseline to identify realistic and attainable targets with an option to utilize the GO teams experience on a project or contract basis.

Monitor results: ensure that projected targets are reached and sustainable with regular reporting and feedback in order to enable management reporting and complete visibility in order to attain on-going energy cost reduction savings.

The results from this project enabled the restaurant to receive clear information with an energy dashboard that is site specific.

Monitoring and targeting is not all about the hardware and software, it is about regular attention and focus on site specific requirements.

In this situation the Green Optimisation team are able to utilize years of food service experience in order to add real value to the clients operations.

The systems installed within this national restaurant chains twin site project are geared to provide standard Green Optimisation system benefits:

GO ACHIEVE Significant energy savings (between 5% & 15%)

GO ACHIEVE Short payback periods (less than 2 years)

GO ENABLE Energy cost management & control

GO REDUCE Carbon emissions & meet CO reduction targets

GO DETERMINE Achievable site energy savings

GO MEET 2014/15 ESOS mandatory sub metering - annual energy audits

GO BENCHMARK Profile key sites for programmed optimisation

GO ROLLOUT Plan & implement energy cost saving measures

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Green leak detection eliminates costly wastage

case study

Green Optimisation was recently contacted by a major UK chain of restaurants to look into whether or not they had a leak on one particular site. The suspected leak was located between their mains-incoming water supply and the utility connection at the end of the road.

The Green Optimisation system utilises a range of meters and web based reporting tools that provide a variety of energy & cost reduction based services. This range of systems is ideal for use on projects where site information needs to be gathered on a timely and easily accessible basis.

On this site the restaurant had 1 x incoming meter provided by the utility company which was located 100m from the restaurant (positioned down a wet 1m deep hole). The restaurant required a meter system to be fitted within their building in order to check that the flow rate on the incoming feed matched the utility companies own meter i.e. to identify if there is leakage between the 2 x water meters within the 100m pipe run.

Fast forward 3 months...

Over a three month period Green Optimisation has:

- Fitted an eight channel pulse counter to the incoming meters (BBSP-PM8)
- Fitted a battery powered GPRS pulse counting meter to the utility companies meter
- Checked the validity of data from both devices by measuring pulses taken during a week long period and comparing those pulses with the meter readings
- Configured a bespoke Energy Manager Online system with the appropriate data feed points

The graph of the data usage provided to the client compares the 2 x meters and identifies any imbalance.

The water utility companies water meter has a [reasonably] constant 100 liters per hour feed greater than the internal water meter, which means either:

- We've missed something and there is another pipe fitted off of the pipe that runs between the utility meter and the site, or there is a leak of around 100 liters per hour.
- We checked the pipework schematics with the client and it was identified that there is no other connection, which means there must be a leak.

A gently dribbling tap will give a flow rate of roughly 1.2 liters per minute, which is roughly 100 liters per hour.

This will be the sort of magnitude of leak that was identified & confirmed at the site by the 2 x water meters being positioned in series.

Once this leak is rectified the site will save 876 cubic meters of water per year or c. £1,750 per year, over the 20 year operational life of the building this means the landlords will save c. £35k in total.

The fitting of the 2 x meters in series with pulse readouts and recording enable the leak to be verified. This metering system will also ensure that the 100m exposed length of interconnecting pipe is protected from future wastage as any over use will prompt a threshold alarm to the site operator.

All this information is delivered to the client via their own energy manager on-line system, which was deemed by the client on this application as being simple and easy to use.