WHAT IS ENISCOPE?

Eniscope is probably the most complete energy management solution in the world, helping you to identify waste and eliminate costs. It combines unmatched hardware with a class leading software platform in one holistic solution.

Eniscope collates real-time energy data from multiple sources in addition to its highly accurate on-board metering capability and delivers critical information via stunning, easy to understand graphics.

Eniscope has been developed and honed over the last 10 years to become a powerful energy monitoring and energy saving targeting solution. Designed and built in the UK, It offers the world's first truly integrated energy monitoring ecosystem.

The Customisable Reporting Tool and Energy Alerts in the Cloud means you have your very own Virtual Energy Manager 24/7/365.

It measures all the required electrical parameters, then delivers second by second live data to a real-time dashboard. It offers easy to understand analytical displays, showing energy consumption patterns either by individual pieces of equipment, circuits, departments or buildings at a one-minute resolution. It is the perfect solution for multi-site monitoring and targeting.

The data is available across networks, to be viewed on any computer, or across a range of portable devices, from anywhere in the world. The information is displayed in a language you will understand, be it kWh's, cost, voltage or carbon.

Eniscope has the potential to make a massive positive impact on your business - both in terms of delivering vital business intelligence relating to one of your most important assets - and also directly impacting on your bottom line profits. But… you don't need to take our word for it. By engaging in a BEST Proof of Concept based on the SMART programme you will be able to determine first hand the significant benefits that can be derived from implementing a robust energy management programme.

43% UP TO — Up to 43% energy savings possible

Designed & made in the UK

Designed for commerce & industry

Itemised energy reporting

Multi-channel, better than 1% accuracy metering

Did you know?

With Eniscope you can:

Eliminate hours of waste

Expose energy abusing equipment

Prove savings & change user behaviour

"The world is facing a global energy crisis. Energy efficiency is the answer"
Bank of America Merrill Lynch.

"Global energy efficiency investment in buildings is projected to increase to over USD $125 Billion by 2020"
International Energy Agency.

WHO NEEDS ENISCOPE?

In a recent report engineering giant Siemens identified energy monitoring and targeting as the number one energy saving option, adding that it makes it easier to perform other energy saving actions.

They state in the report that: "The ability to measure and monitor real time key performance indicators on your site, by collecting the right data in the right way, will mean you can highlight problem areas and identify quick payback opportunities."

With this report in mind, we believe that Eniscope is the world's most complete energy monitoring solution.
Eniscope is unique as it delivers the following:

1. **Three phase voltage reference.**

2. **Multi-circuit monitoring.**

3. **Pulse inputs to also monitor such things as gas, water, oil, steam or heat.**

4. **It can read other meters.**

5. **It has ethernet connectivity, allowing it to connect over a local network or the internet.**

6. **Multiple (8) temperature monitoring.**

7. **Eniscope is CE, UL and cUL approved to work up to 600V (LN).**

8. **Eniscope software delivers the data and control through apps, delivering real-time data, analytics, renewable displays, public displays, customer reporting and a mobile app.**

Key Benefits:

Real-time monitoring of 8 three-phase metering points, 8 pulse inputs, 8 temperature inputs.

Meters provide accurate measurement of 30 electrical parameters and can read existing meters e.g. gas and water.

Historical and real-time data viewable on any computer, or mobile device, from anywhere in the world via Eniscope Analytics.

Option to display real-time consumption and/or generation data on-site, affecting behaviour change and raising awareness.

Remote updates ensure continuous improvement via the cloud without the need to purchase additional equipment.

"30% of energy being used in buildings is done so inefficiently or unnecessarily."
United States Department of Energy.

"79% of businesses view reducing electricity costs as essential to creating and maintaining competitive advantage"
Deliotte.

THE ENISCOPE PROGRAMME

BEST have created a unique, holistic approach to address an urgent need... it's a combination of products, software and services that facilitate the delivery of an unrivalled, end-to-end energy efficiency service. We call it the **S.M.A.R.R.T.** approach to energy management (Survey, Monitor, Analyse, Reduce, Review, Target) and it enables us to deliver a total solution that is tailored to your specific needs.

BEST is the global leader in the capture and analysis of itemised, real-time energy consumption.

Because *"You can't manage what you can't measure"* our energy management system makes it easy for BEST trained and certified partners to identify, implement and verify a wide range of strategies and technologies that offer significant savings, enhanced control and a rapid return on investment.

The best route to finding out what the SMARRT Programme can do for your organization is to identify a suitable site where we can undertake a Proof of Concept... after all "the proof of the pudding is in the eating".

SMARRT

1 Survey

We have developed an IOS / Android app to assist with delivering quick, accurate on-site surveys.

2 Monitor

Using our proprietary monitoring system – Eniscope – we can accurately track energy usage (and wastage) over time. Second by second. Device by device.

3 Analyse

The data from Eniscope is sent up into the cloud, where our partners and clients can monitor it in real-time using our intuitive interface.

4 Reduce

With the benefit of itemised data, we can remotely isolate areas of wastage and take immediate low-cost action. In addition, we can introduce retrofit technologies to make even greater savings.

5 Review

How well has the strategy worked? This stage is all about comprehensive reporting - we can show granular analysis of the energy management strategy to inform the future targeting process.

5 Target

The key to a successful investment in energy efficiency is sustained success. Our energy monitoring system stays in place, verifying success and identifying targets for change.
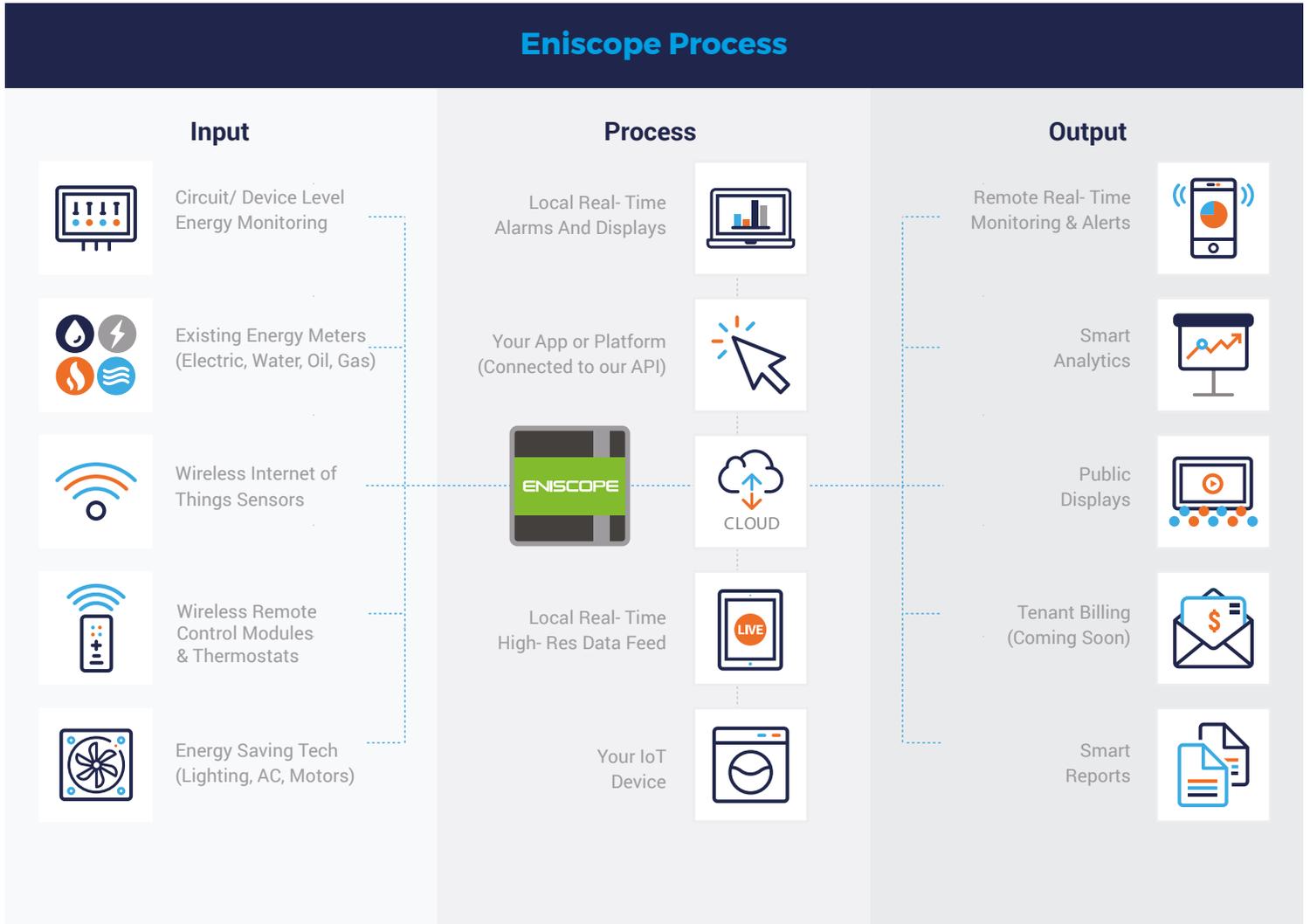
ENISCOPE TOTAL SOLUTION

Eniscope can be configured to collect data from a number of sources in addition to its own on-board metering capability. This information can be seen second by second in real time via custom designed apps. Information is simultaneously exported to our cloud based servers where it can be analysed at any time - from anywhere.

Automatic alerts can also be set to notify occupants when anomalies occur, before they become costly problems. Our fully customable reporting tool will allow you to pre-select in what format and how often you need to see your results.

Where desirable, Eniscope can also enable you to showcase your investments in green technology, along with the benefits they are delivering through the utilisation of public displays.

With the Eniscope API you can integrate the data from Eniscope devices into existing platforms or design new products that are underpinned by accurate, itemised, high-resolution energy information.
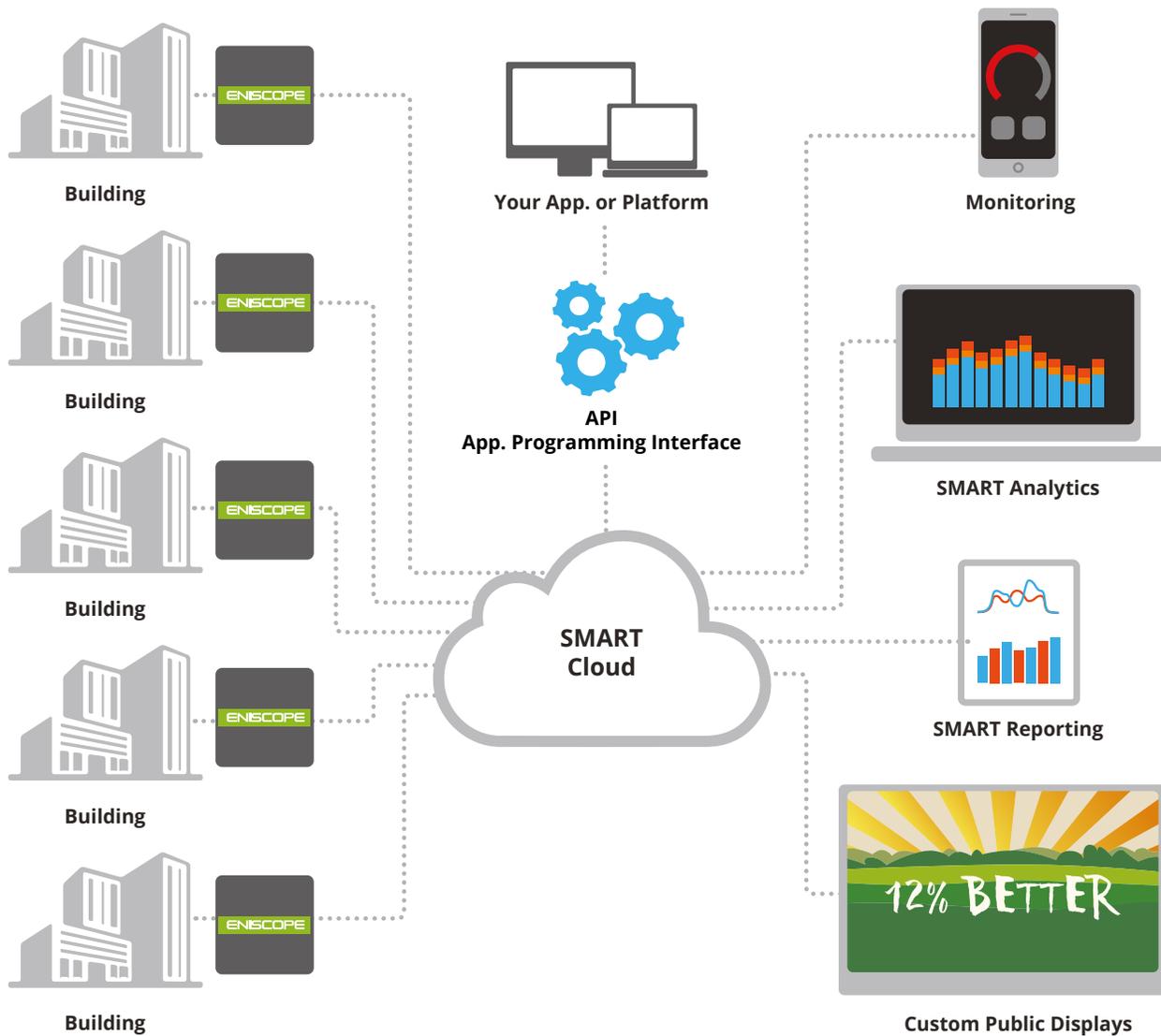
Eniscope Process

Input

Circuit/ Device Level Energy Monitoring

Existing Energy Meters (Electric, Water, Oil, Gas)

Wireless Internet of Things Sensors

Wireless Remote Control Modules & Thermostats

Energy Saving Tech (Lighting, AC, Motors)

Process

Local Real- Time Alarms And Displays

Your App or Platform (Connected to our API)

ENISCOPE

CLOUD

Local Real- Time High- Res Data Feed

LIVE

Your IoT Device

Output

Remote Real- Time Monitoring & Alerts

Smart Analytics

Public Displays

Tenant Billing (Coming Soon)

Smart Reports

MULTI SITE APPLICATIONS

When it comes to remote multi-site monitoring and targeting, Eniscope comes into a different league. Suddenly all of your energy information is available in one location, disaggregated and reinterpreted into a language you can understand, be it kWh's, carbon or cost. Information is power and Eniscope puts the power back in your control.

Managing disparate assets across a whole region or country is particularly challenging. However, Eniscope can provide a unique set of benefits in this type of application.

Monitoring and targeting of comparative facilities and competitive league table of results can be a powerful motivator for behavioural change.

Having identified the most effective energy management strategies within top performing branches, it becomes easier to replicate these successes across an entire estate be that 100's or 1000's of comparative facilities.

Building

Building

Building

Building

Building

Building

Your App. or Platform

**API
App. Programming Interface**

**SMART
Cloud**

Monitoring

SMART Analytics

SMART Reporting

12% BETTER

Custom Public Displays

MONITORING

TClarke

Eniscope Hybrid can not only monitor other pulse meters, such as gas, water, oil, hot water etc but also trigger automatic alerts when unusual energy consumption patterns occur. TClarke, a construction company in the UK, uses this function of Eniscope to ensure they keep close control of their daily energy use on an ongoing basis.

TClarke a leading construction and building services contractor uses Eniscope Hybrid as the central hub of their energy management programme.

In addition, to monitoring electricity they also monitor other forms of energy use including gas and water. Eniscope has been configured to trigger real-time alarms and alerts, so that immediate corrective action can be taken if any anomalies occur.

For example, the Eniscope analytics graph below s reveals an unusual spike in hot water consumption. It triggered an alert and upon investigation a hot water tap was found to be left running. A very simple problem to rectify, but it could have been an expensive waste of water and gas if it had not been identified quickly.

Measuring External & Internal Temperature

One vital aspect of energy monitoring is to have a context for energy use. TClarke use the Eniscope Hybrid to monitor both internal and external temperatures. This then provides intelligent data to spot trends and anomalies taking into account external influences.

In the Eniscope Dashboard display (below) the blue line shows the temperature measurement whilst the analytical graph displays the change in energy consumption and how it alters with changes in temperature.

This enables TClarke to see the usual pattern of behaviour - the heating energy demand reduces as the temperature rises. This adds context to what is happening to the energy being used, empowering informed decisions on energy saving actions and policies.

It is important to take into account temperature to enable an intelligent like for like comparison when evaluating energy consumption and energy saving initiatives. For example, a cold weather spell could hide energy savings as more heating is used or a cooler summer could exaggerate energy savings as less air conditioning is needed.
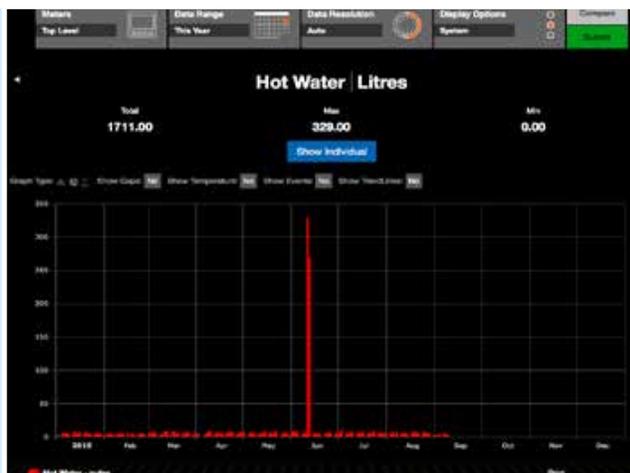
A spike in hot water usage triggers an alarm

The blue line compares temperature to actual energy use

Proof of Concept

MULTI SITE APPLICATIONS

KFC in Malaysia have come to rely on Eniscope to deliver energy savings across their many outlets. By benchmarking energy use in their top performing outlets, they are able to rollout the most effective energy management practices throughout the region.

Fast food outlets are intensive users of energy for cooking, refrigeration, lighting, heating and air conditioning. Effective energy management is therefore a vital part of making outlets profitable. KFC's franchisees in Malaysia have been using Eniscope to make significant saving in a number of outlets.

Initially Eniscope was installed at a few pilot outlets. Once savings were proved they began rolling out across the country, so far to over 100 outlets.

An attractive feature of Eniscope's cloud based analytics is that it allows KFC's headquarters to remotely manage all of their outlets and benchmark their performance against each other. Shared knowledge and expertise allows energy saving practices to be implemented much faster.

KFC have also been using some of BEST's other solutions to make further savings. CUES is used to save energy in their refrigerators and chilled rooms, whilst ACES is used to make further efficiencies on air conditioning systems.

The use of Eniscope was so impressive the company are looking to install Eniscope in KFC locations throughout Malaysia and Indonesia.

A popular feature of the Eniscope energy management system is the cloud based analytics which provide a detailed breakdown on energy consumption is a very clear and easy to understand user-interface.

The example below is of the air conditioning system in the KFC in Kota Damansara, Malaysia.

Between November 21-27 the blue line in the Eniscope display reveals high energy demand from this circuit, using an average of over 37 kW overnight, when the KFC outlet is closed. Once the Eniscope data was analysed targeted action was taken to make sure the air conditioning was off overnight.

The red line shows the results after adjustments were made - this simple action produced a 30% energy saving on this single circuit.

The Eniscope's Analytics comparison ability also shows what this energy saving delivers in monetary terms. Here the exact same two periods are displayed, but reports on the cost of the electricity consumption. We can see there is a saving of almost a 1,000 Ringgit, saving 30% or around $300 a week, again on a single circuit.

Before and after analysis in kW's
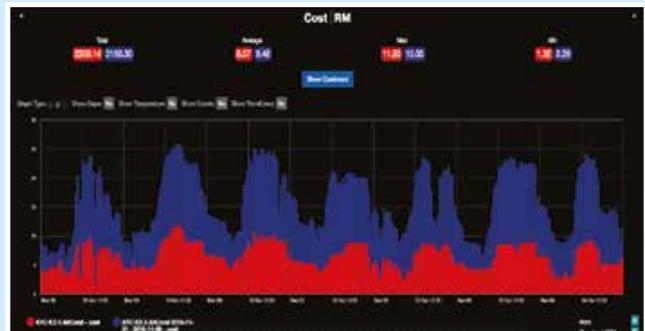
Before and after analysis in cost

Proof of Concept

RENEWABLE PUBLIC DISPLAY

Eniscope not only provides real-time data on energy consumption, but also data on any energy generated by on site energy generators, such as solar and wind renewable installations, amongst others.

Eniscope is used in this way at the headquarters of insurance company Topdanmark in Ballerup, Denmark.

The company installed 3,042 solar panels, generating 752,000 kWh, saving approximately 600 tonnes of CO2 emissions annually.

To ensure they are generating the energy they need Eniscope allows Topdanmark to monitor their solar facility.

Eniscope aggregates information on the power generated from the solar panels, providing a real-time visual display of the data to visitors and staff.

Employees are thus engaged in making sure they use energy efficiently and do not waste the valuable solar energy generated, while visitors are reminded of the importance of sustainability and Topdanmark's green credentials.

Eniscope is at the heart of the system, which is northern Europe's largest rooftop solar installation with over an acre of solar panels. The Eniscope Renewables display offers a powerful tool to engage building occupants and other stakeholders to increase efficiency and sustainability.

Proof of Concept

ENERGY MANAGEMENT

Falck

Falck A/S is a large company, employing 34,000 people across 45 countries. They provide healthcare, safety training and are the world's largest ambulance and emergency service.

Due to the importance of their work, Falck need to be able operate in a fiscally astute way, which includes managing energy consumption. They have turned to Eniscope to monitor energy use and target energy saving actions.

Falck began by testing Eniscope against another leading energy management system in proof of concept project at their headquarters in Copenhagen. Eniscope not only outperformed the competitor in terms of energy saving opportunities identified but was also found to be much more user friendly, offering a non-technical approach to energy management.

Over a 5 week period Falck, with the help of IQ Energy and BEST's Eniscope system managed, to reduce their energy consumption by 300 kWh per day on average – a saving of more than 20%.

This resulted in about £20,000 of cost savings in a year for an expense of just £12,000 – a very healthy return on investment in just 7.2 months.

On top of the energy savings there were also very significant savings in administrative costs and the ability to stay in control. No more wasted man hours doing manual readings – the Eniscope does them all remotely.

Falck's technicians were able to analyse the energy consumption of various circuits in detail using Eniscope Analytics cloud based software. For example, among the savings Eniscope revealed were that the conference centre HVAC system was operating throughout the night and on weekends when it was not being used. In another example, Eniscope identified the ventilation system in canteen running constantly as the staff did not know how to use it.

After the successful pilot programme Falck made a frame agreement to roll out the Eniscope solution to all their 135 sites in Denmark, confident in the knowledge that on average they should be able to realise savings of at least 20% on average.

Finally as part of their Corporate Social Responsibility initiative, they are setting up public energy displays in key locations in order to demonstrate in real-time their energy savings.

COST REDUCTION

Calsonic Kansei is a large Japanese automotive company with 50 manufacturing bases around the world. Manufacturing sites are very complex and it can be difficult to keep track of energy use. Calsonic implemented Eniscope with the aim of reducing costs and gaining control of their energy.

As a large manufacturing business energy costs can easily get out of control. This is evidenced at one of their facilities in Mexico where they make parts for Nissan.

The site's monthly energy bill from state owned utility Comisión Federal de Electricidad (CFE) averaged out at $400,000 per month. The managers, and Japanese parent company, wanted to gain control of their energy use, discover where inefficiencies were happening, and in the process reduce their energy costs.

After considering several solutions they chose Eniscope, they soon realised that Eniscope's real-time, intricate energy consumption data made their invisible energy use visible. As a manufacturing site they found Eniscope's ability to measure metrics such as voltage and power factor very useful.

This allowed them to precisely monitor and analyse energy use, then target accurately the required changes and savings. The real-time data gave them the power to instantly change behaviour and practices to reduce waste.

After testing an Eniscope on one circuit for two months, Calsonic willingly financed a major investment in Eniscope to cover more circuits. Initially they have installed Eniscope to cover 18 circuits and are in the process of adding another 30 to 40 circuits.

The first 18 circuits have already produced annual savings of $120,000 through low and no cost energy efficiency improvements. Eniscope is now highlighting further areas where energy saving options and devices can be targeted in the most effective way.

Eniscope's real-time capabilities and alerts also offer substantial savings on peak demand penalties, allowing Calsonic to manage energy consumption so high spikes of energy use are eliminated.

Calsonic Kansei are very happy they chose Eniscope as their energy saving option.
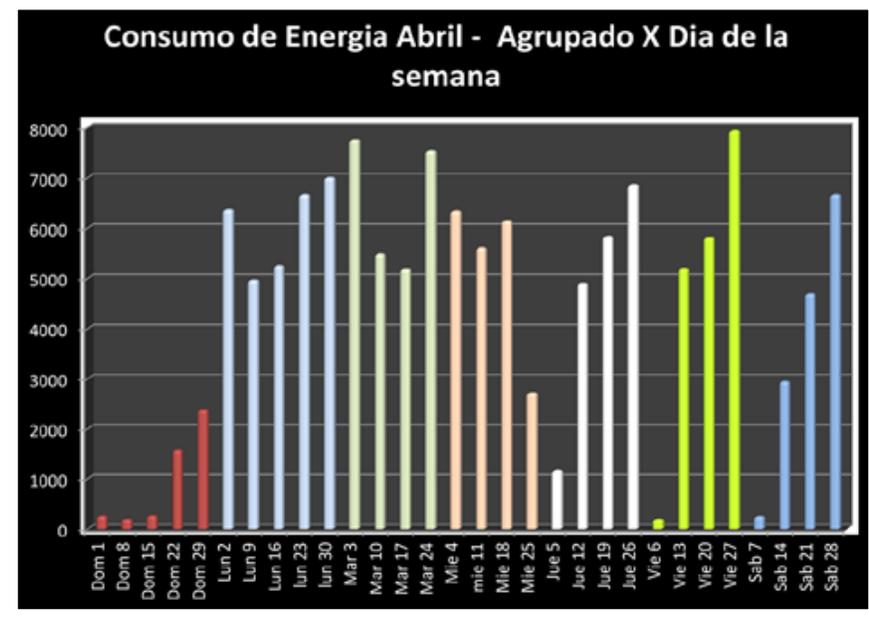
UTILITY CHARGE MANAGEMENT

Bethune-Cookman University in Daytona Beach Florida was able to avoid Peak Demand Penalties and made energy cost savings of 43% thanks to Eniscope, and all starting within a few days of installation.

Bethune-Cookman University contracted BEST Partner, Ekon Energy to review their energy usage and implement an energy management programme utilising Eniscope at its core. They were able to identify inefficient employee behaviours and also appliances that needed changing. Importantly they were able to see what inefficiencies there were and at what time of day they were occurring.

Like many companies and organisations Bethune were on a contract with their local utility company which charged for electricity use on actual usage (kWh), plus a heavy penalty based on the highest point of demand or peak energy use. The university would not know whether they suffered from the peak demand penalty until they received their electricity bill.

Once Eniscope was installed at Bethune it quickly highlighted a problem that had been undetected for five years. A water chilling pump room on campus that used many motors to drive the cooling system for part of the university.

The system had been installed with automated shut down of the complete system when a set minimum demand was reached, the university's engineer was unaware of this setting.

This meant that overnight, as the buildings shut down, the cooling system would demand little, and hence the system would shut off completely.

As a new day started and the temperature rose, still early in the day and before any staff were in the pump room, the system would kick in with the many 30 and 50 horsepower pumps starting simultaneously. This produced a huge power spike every day as the cool water was pumped around the system.

Eniscope instantly displayed this spike in real-time. The chiller equipment service company were called and they were able to alter the setting on the system. The late night shut down was stopped, with the system dropping to a low-flow standby mode. This prevented the full system cold start-up; the ensuing massive spike in energy use and the subsequent Peak Demand Penalty from the utility company.

Eniscope's real-time capabilities delivered monthly savings of over 30% on just this one system on campus, it was instrumental in identifying a real problem, which had been hidden, it was also a very simple "no cost" adjustment to correct the energy wastage. Overall energy savings of 43% were achieved across the campus.

PRODUCT VERIFICATION

Pool Academy in the UK is a school for almost 1,000 11-16 year olds and like most educational sites it needs a lot of management to ensure energy isn't being wasted. They are also keen to implement energy saving initiatives in the most cost effective way.

The principal and governors at the school are well aware that they need to take effective energy saving measures. They installed Eniscope to manage their energy use, but it also helps them to target energy saving efforts so the right investment is made to provide the best return on energy and monetary savings - a vital feature of any energy monitoring and management solution.

There are many energy saving products on the market and Eniscope is a very effective tool for organisations test their effectiveness and see if they live up to their claims.

Pool had been considering investing a substantial amount of money into replacing their external lighting with energy saving LED lighting. This would appear to be a no-brainer, LED lighting is certainly energy efficient, particularly compared to traditional light systems. They also last longer reducing maintenance costs. The downside is they cost more than the current bulbs and systems, but over the long term LEDs offer savings.

By analysing energy use data on the external lighting circuit monitored by Eniscope the engineering team at the Academy were able to see on the Eniscope Dashboard the actual daily cost of running the existing lighting.

They discovered that the cost averaged out at £1.90 per night, making an investment running into potentially thousands of pounds one that had to be seriously thought through.

The data from Eniscope is making the board of governors reconsider the upgrade to LED lighting as a standalone project. The conversion to LED lighting will take place, but as maintenance and natural replacement is carried out the lighting can be converted to LEDs delivering the long term savings but without a single major investment - protecting stretched budgets while allowing sustainable and responsible change.

The money invested to cut energy waste and improve energy efficiency can therefore be targeted to where it will have the biggest impact.

Eniscope empowers decision makers to make the right targeted choices for their company or organisation - knowledge is power.

Eniscope Dashboard isolates the running cost of the lighting

best.
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