Energy Management

What is an Energy Management system and what's in it for me?

Energy management is the means to controlling and reducing your organization's energy consumption and controlling and reducing your organization's energy consumption is important because it enables you to:

- Reduce costs – this is becoming increasingly important as energy costs rise.
- Reduce carbon emissions and the environmental damage that they cause - as well as the cost related implications of carbon taxes and the like, your organization may be keen to reduce its carbon footprint to promote a green, sustainable image. Not least because promoting such an image is often good for the bottom line.
- Increase the green star rating of the building.

The Energy-Saving Meaning

When it comes to energy saving, energy management is the process of monitoring, controlling, and conserving energy in a building or organisation. Typically this involves the following steps:

1. Make Commitment
2. Implement a recording system
3. Assess Performance
4. Create Action Plan
5. Monitor Progress

(And then back to step 2, and the cycle continues...)

➢ Make Commitment

In order to successfully deliver successful energy savings in a building or organisation a commitment must be made to allocate staff and funding. As a first step an energy manager should be appointed to set goals, policies, track progress and promotes the energy management program.

➢ Implement a recording system

This would provide the baseline against which energy reductions can be measured. The system would be used to collect, analyse and report on energy data and be able to be viewed via a standard web browser from anywhere. The same system could be used to measure gas and water consumption allowing your greater control over all utilities usage.

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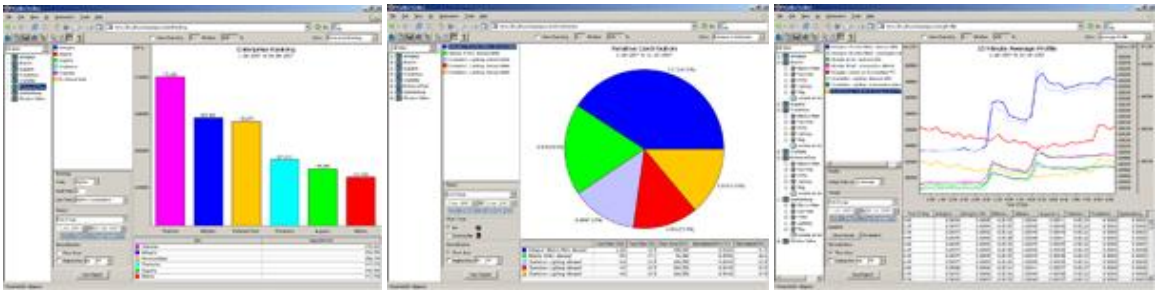
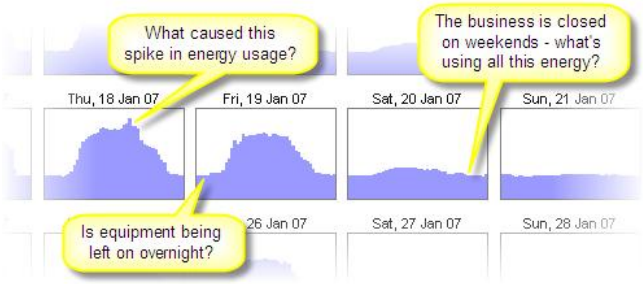
Other benefits of the data that is collected is to compare other facilities and highlight underperforming buildings. This data could also be pushed to a display unit in the facility showing in a dashboard your green credentials. As minimum separate monitors should be implemented for the high power consumers which typically lights, Air Conditioning and refrigeration systems this allows for individually analysis of these systems and fine tuning of energy usage. "You can't manage what you don't measure" is a common management adage which is also used in energy management.



➢ Assess Performance

Once the data has been collected an analysis can be conducted. For example, an unbelievable number of buildings have advanced control systems that could, and should, be controlling Lighting, Air Conditioning or Refrigeration systems, but, unbeknown to the facility owners, are faulty, misconfigured or overridden, and consequently committing such issues but not limited to:

- Heating or cooling an empty building every night and every weekend
- Systems working outside of the design parameters e.g. over heating or cooling
- Lighting left on when they should be of via a schedule
- Incorrect settings of defrost schedules for refrigeration system due to underlying system fault
- Poor maintenance
- Incorrectly set air conditioning dampers
- Low power factor



An example of using stored data to analyse energy wastage

The above analysis is the first step to give you a baseline level of current usage. The second step would be based on the assessments, determine energy reduction opportunities and targets.

➢ Create an action plan

Based on the assessment arrange for expert help in determining areas where energy savings can be made. Some of these can involve no capital investment and may be a matter of retraining, policy changes or behavioural change.

Capital investments would need analysis based on ROI, age of equipment, feasibility to change or modify equipment and time for the implementation to take place. There are various energy saving products on the market each vendor claiming different savings claims, most are bets case are rarely achievable from our experience.

With the baseline data you now have available you can enter into agreements with guarantee energy savings with these vendors. Negotiations can also take place with power providers on services charges.

An action plan is must be established outlining the strategy that will be implemented with the benefits and submitted to upper management for approval. Also different facilities require different strategies due to the having different plant and equipment as well as different operational requirements.

➢ Monitor Progress

Once you've taken action to save energy, it's important that you find out how effective your actions have been and are meeting baseline requirements:

- Energy savings that come from behavioural changes (e.g. getting people to switch off their computers before going home) need ongoing attention to ensure that they remain effective and achieve their maximum potential.
- If you've invested money into new equipment, you'll want to prove that you've achieved the energy savings you predicted or have been given.
- If you've corrected equipment or control-equipment settings, you'll need to keep checking back to ensure that everything's still working as it should be. If you're not keeping an eye on your energy-consumption patterns you can easily miss such problems.
- If you've been given energy-saving targets, you'll need to provide evidence that you're meeting them, or at least making progress towards that them.

What can CEC do for me?

CEC can offer a range of energy efficient solutions to save you money and greenhouse gas emissions in the workplace, commercial sector, industrial sector or public buildings.

In conjunction with our strategic partners can assist you to implement and monitor energy saving initiatives. We only recommend best of breed products and services for your facilities and are not locked into any supplier. We look at each project with its unique needs and match a product or service to increase the ROI of the investment as well as after sales service and support through the life cycle.

Our engagement can be from total implementation to consultation or anywhere in-between, our preference would be that the client appoints an energy manager who we would help train and assist. This would give you the client ownership of the process and understanding of you energy usage

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Voltage Optimisation

Through our sister company Power Intelligence, we can offer the high energy saving voltage optimisation units, ranging in size from 50kVA (70A) through to 3000MVA (4,200A).

Voltage optimisation is a high efficiency transformer solution which reduces the incoming voltage to the correct levels, and in doing so saves energy (kWh). This is achieved through a high efficiency transformer and has the potential to reduce your electricity consumption by 2% for every 1% the voltage is reduced to the correct level. This is typically 10-14% energy savings.

Our voltage optimisation units are designed and manufactured in Australia for the Australian environment.

Further information on our range of voltage optimisation units can be found on our website: www.powerintelligence.com.au