CASE STUDY

KENT BREWERY SYDNEY

CARLTON & UNITED BREWERIES BEST PRACTICE PEOPLE AND PROCESSES

Best Practice People and Processes is an organisational development program that aims to build capacity within organisations to apply and sustain effective energy management practices. This is achieved through a series of workshop programs targeted at developing staff skills and knowledge as well as raising awareness of energy management across an organisation – from senior management to shop floor and across site services, engineering, maintenance and management through to operational staff.

The Department of Industry, Tourism and Resource's Energy Efficiency Best Practice (EEBP) program developed and piloted the program within the beverage sector in response to the ongoing challenge that organisations face in achieving continuous and sustained improvement in energy management on their sites.

The program is built on organisational change principles that highlight the importance of effective communication, staff involvement and senior management support. Companies may utilise the program to begin their energy management program or, as in the case of Carlton & United Breweries (CUB) , a division of the Fosters Group, it can be used to improve a current program by addressing the people and organisational challenges that may have limited an energy management program in the past.

One of the core components of the program is the development of a cross-functional energy team which is supported by a series of workshops in which the team identifies an energy efficiency project and develops a comprehensive project plan to support its implementation. Targeted workshops on steam, air and refrigeration are also available to support the team and their project.

An outside specialist and monitoring equipment is used in collaboration with operator's knowledge to identify additional opportunities for savings. There is also an energy awareness raising module for shop floor staff and an energy strategy workshop for senior management. In this way a fresh eyed perspective on the technical opportunities is combined with an increased capacity of the organisation to address and implement those opportunities – maximising cost reductions and revitalising energy management in participating companies.

'This involved people from all areas and the benefit is significant — not only to energy costs, but to the way in which we operate'.

MICHAEL STONEMAN, BREWING MANAGER.

INDUSTRY TOURISM RESOURCES
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energy efficiency best practice

Carlton & United
BUILDING GREAT AUSTRALIAN BRANDS

A NEW ENERGY TEAM AT CUB KENT BREWERY

Energy management is not a new concept for CUB and their sites across Australia. They have been part of the Greenhouse Challenge for a number of years, each site has energy efficiency and Greenhouse targets, key staff have specific accountability for energy management on site and external energy management consultants are available to support site-based energy efficiency initiatives.

Energy teams are not new to Kent brewery either and over the past few years a number of them have been formed. Typically however, they have tended to become inoperative after a period of activity.

Winston Foo (Site Services Manager) and Michael Stoneman (Brewing Manager), saw an opportunity through the BPPP workshop program to 're-invigorate' energy management on site. It also provided the opportunity to establish a new energy team. Rather than having a strong management contingent on the team, as had previously been the case, they invited nominations from across the site. They were looking for:

- Representation from all production areas
- Individuals with enthusiasm, good communication skills and strong networks within their production area
- A mix of skills and perspectives from site services and maintenance with representatives that included both mechanical and electrical skills and experience
- Individuals that wouldn't be afraid to share their ideas on energy efficiency opportunities and the way in which those ideas might be turned into concrete initiatives.

These criteria were reflected in discussion at the first workshop. As a whole, the team placed a high priority on ensuring that the team achieved significant energy efficiency outcomes from their work together. The workshops supported the team in this goal by building their capacity to identify and implement appropriate energy efficiency improvements through the development of a comprehensive project plan and capital expenditure proposal.

POTENTIAL ENERGY: MANAGING ENERGY SYSTEMS AND PROCESSES

The first of five workshops (three half-days and two full days held over six weeks) encouraged the energy team to step back from their daily activities and take a 'big picture view' of energy management at Kent Brewery.

The environmental and financial drivers behind energy management were explored with particular reference to changing market conditions and the scientific, social and economic implications of the Greenhouse Effect and Climate Change. There was discussion of the way in which energy was managed at CUB with particular reference to the role, opportunities and future activity of the energy team. The final session of the workshop began a process by which the team identified an energy management project to work on throughout the course of the workshop program.

Project Selection

The team were encouraged to think broadly about possible energy management projects, in particular identifying opportunities that would lead not only to energy efficiency benefits, but that would address current production challenges. 40 minutes and 39 suggestions later the team had a significant list from their brainstorming efforts. Ideas were grouped into the categories of hot water, steam, refrigeration and information gathering/dissemination projects and the team were asked to spend time in the intervening week identifying data sets and information that would support the selection of a project appropriate to the team.

The team identified hot water use on site as an appropriate project for them to tackle. They knew that there was a significant amount of hot water wasted on site but there was currently no data to support an exploration of where and how hot water is used and how procedures could be improved to reduce hot water wastage. This presented an excellent project for a cross-functional energy team as it provided an opportunity for them to gather data, communicate it across the site and then work with production teams to achieve procedural and behavioural change – a challenging task unless addressed internally by staff that have a high degree of trust and credibility with operators and management. The financial benefits of the project were also expected to be significant.

From 'identified project' to 'project plan and capital expenditure proposal'

- How would success of the project be measured?
- What data do we need and where can we find it?
- Who are some of the internal and external stakeholders that could have an impact on the project?
- What would the team need to do to develop management support for the project?
- What resources would be required?
- How does change happen around here?
- How can we link energy efficiency to other current priorities in the organisation such as Occupational Health & Safety?
- How can we get staff motivated and involved in energy management generally and in being more efficient with their hot water use in particular?

These were some of the questions explored through site visits, discussion with key stakeholders, input from Phil Browne the Corporate Sponsor for the project, small group activities and team meetings that were held between workshops. The team was supported by a facilitator and structured workshops as they worked towards the development of a capital expenditure proposal and a hot water project implementation plan.

At the fifth and final workshop the capital expenditure proposal and project plan was presented to David Grant the site General Manager. It was accepted and capital of $45,000 was approved for the purchase and installation of hot water flow meters to each production area.

RAISING ENERGY AWARENESS ON SITE

The team identified one of the greatest opportunities to support their project and energy management in general as being to raise awareness of the importance of energy efficiency on site. At the first workshop many of the team were surprised and motivated by the issue of climate change and the positive role they could play in reducing greenhouse gas emissions. They felt that this should provide the basis to their own energy awareness program.

Although there is an optional module available to them with an external facilitator presenting sessions on site, the team decided that due to the difficulties posed by shift work and the opportunity that it provided to demonstrate their involvement and commitment to energy management, they should do the session themselves.

A two hour workshop was held with the Energy team to explore the best way of presenting the information and the type of challenging questions that might be asked by staff members. At the time of writing, 60 per cent of the site had been involved in these communication sessions.

The strength of energy awareness that has been achieved however, is not only through formal workshops. With representatives on each of the production areas whenever energy issues arise they are able to communicate the importance of energy management and ensure that issues are addressed. The high level of awareness and networking throughout the site can be attributed to the commitment and enthusiasm of the energy team.

'It was expected that the team would die down just like past Energy teams but we are still going strong. More than ever we are talking amongst the people on the floor about energy management and achieving changes that can only be achieved by getting them involved.'

John Rando, Electrician and Energy Team member, Packaging

TECHNICAL STEAM WORKSHOP

An additional component of the BPPP program is a series of technical workshops focused on the delivery of services such as steam, compressed air and refrigeration.

The Technical Steam Workshop provided an opportunity to support the Energy Team's work on hot water (since it is generated by steam) by bringing together a cross functional group of services and production staff that have an important stake in the delivery of consistent, cost-effective, high quality steam.

The foundation for the workshop was provided by a technical steam expert who ensured that all participants had a solid understanding of the way in which steam is produced and delivered to production staff. The technical background provided an important 'communication bridge' between services staff who are charged with the task of ensuring a consistent supply of steam to production, with the production staff who depend on supply to produce product.

One of the key revelations for many steam users was that the ability of the services staff to supply the steam depended to some degree on the activity of production staff themselves. For example, at times of peak demand users would often be competing for steam which would sometimes lead to 'tripping' of the boiler. When the boiler was up and running again there would often be immediate high demand, limiting the ability of all users to get the quality and quantity of steam that was required. Discussion around production priorities and steam use highlighted that there are a number of processes to which steam supply is critical – with failure leading to direct impact on production costs and product wastage, whilst others are less critical and can potentially be scheduled accordingly. This has led to changes in the way steam is distributed at times of peak load, in particular by reducing the load put on the boiler through hot water production at peak times.

IMPLEMENTATION – HOT WATER, STEAM AND OTHER ENERGY TEAM ACTIVITIES

Eight months after the completion of the training modules the energy team is still in place and continuing to be actively involved in activities that support energy efficiency at Kent brewery. For example:

- Members of the energy team have been involved in steam and compressed air surveys which have been carried out on a number of different production areas.
- Major leaks are communicated to production team managers highlighting the costs associated with leaks. The team representative in that area is then involved in ensuring that the maintenance required is carried out.

- Hot water flow meters have been purchased and installed ($45,000 investment). Data is now being gathered highlighting hot water use in each area. Initial results on just one line have identified savings of 120,000 litres of hot water each week by using cold rather than hot water in the first phase of a cleaning process.
- The energy team is developing a project plan for communicating the results and working with operators to reduce hot water use and wastage through behavioural and procedural change.
- Around 60 per cent of the site has been exposed to energy awareness training carried out by the energy team members. The remainder will be covered in the following months and through the work that will be carried out around hot water procedures.
- There has not been a significant trip of the boiler for several months (down from one or two events per month). This has been achieved through improved communication between services staff and steam users which has led to a decrease in the production of hot water as the boiler approaches peak capacity.
- A cross-functional group recently participated in two Refrigeration technical workshops. As well as enhancing their understanding of the refrigeration system, participants in the workshop have trialed new initiatives. One such initiative, reducing the set-point temperature of the glycol used to distribute cooling around the plant, has had a positive impact on efficiency by increasing the time period before an additional compressor is required in marginal load situations.
- Members of the Energy team have been involved in reporting back to the National Energy Management Team on their activities and successes to date.

'We have made significant energy efficiency savings here at Kent in the past but I would say that we have already achieved the easy wins. The more difficult projects are those that involve people and this is the challenge that we are currently dealing with through the work of our energy team. The workshops have provided an important focus for the establishment and development of this team and contributed to its ongoing success.'

Winston Foo, Site Services Manager

'This is one of the first projects attempted at this plant that has involved people from all areas and the benefit of this is significant – not only to our energy costs on site, but to the way in which we operate.'

Michael Stoneman, Brewing Manager

As well as their involvement in the BPPP at Kent Brewery, CUB have completed a BPPP at Abbotsford Brewery in Melbourne (leading to a compressed air leakage reduction program on one bottling line resulting in savings of $31,000 at a cost of $9000). Furthermore, CUB have rolled out 'energy awareness' sessions nationally to five sites at Abbotsford, Cascade, Kent, Matilda Bay and Yatala and participated in a 'Big Energy Project' innovation process, focussed on refrigeration at Abbotsford brewery. A case study on the BEP Abbotsford refrigeration project has also been produced.

Overall savings from their involvement in these processes will lead to year on year savings of around $500,000 and 8000 tonnes of greenhouse gas emissions.

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