Meadows energy savings grow like mushrooms

Established in 1970, Meadow Mushrooms knows a thing or two about growing great fungi. They also know that to save money on energy, the key is to involve staff and feed them plenty of information.

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OVERVIEW

The Christchurch company produces 200 tonne of mushrooms a week, mainly for the New Zealand market, with each one incurring an energy cost.

In 2014, after partnering with the Energy Efficiency and Conservation Authority (EECA), Meadows started working with energy experts Enercon to identify energy consumption and savings opportunities.

Meadows has already banked savings of almost 4.8 GWh per year from its energy efficiency plan – worth close to half-a-million dollars. The company has saved about 20 per cent of its annual energy spend while increasing production.

John Barnes, Chief Executive at Meadows, says taking a company-wide focus to energy efficiency has paid off big time.

“For a relatively small investment we are making big savings, having already paid back the original investment.”

Wayne Collingwood, Meadows General Manager Operations said the company knew savings were there to be made, but he also knew everyone needed to be involved, especially senior management.

One of Canterbury’s largest employers, Meadows makes its own compost, grows the mushrooms, then sterilises the used compost so it can be recycled. Each process uses considerable energy.

The first step in the energy savings plan was establishing a dedicated energy management team that met monthly to assess energy bills and variables. Enercon was crucial here in providing detailed audits to identify efficiencies at every stage of Meadows’ processes.

Some staff started out sceptical, but rapidly caught the energy savings bug, Wayne said.

“It became like a treasure hunt to discover new avenues to pursue.

“It was key that everyone was involved. To maintain momentum, we kept communicating to all staff about the project and the positive benefits the teams were achieving.

“Those close to it get a great sense of great satisfaction. But you need to keep communicating and let staff know about the savings they have achieved.”

The other key learning is that energy efficiency mustn’t come at the expense of quality, he added. EECA’s assurance on that score sealed the partnership.

Enercon’s Sam Roose said an audit of all five Meadows sites between May and August 2014 found several processes used more heating or cooling than required for optimum mushroom growing, or they were losing heat to the atmosphere that could otherwise be used within mushroom growing processes.

Several systems were operating with settings that increased the time required for mushrooms to grow, and several processes operated for longer, or with more power than required for actual production demands.

There was also limited staff awareness of energy efficiency.

One discovery from the audits and monitoring was that the sterilisation process at its older tray farm operation was hugely inefficient compared to the newer shelf farm operation.

The old building was leaking heat and the wood compost trays were taking twice the energy to sterilise than at the newer site.

Another win was installing a larger, modern compressor, an investment that proved to have a short pay-back time.

The road to more mushrooms for less money was not always smooth. One challenge was to install meters to measure where steam and heat was escaping. Installation of new meters onsite had to wait, while additional complexity in the maintenance process was uncovered, and managed.

Wayne's advice – take those extra steps in advance. In this case getting the installer onsite to correctly evaluate and understand the unique issues, assess how long the job will take, and plan for all contingencies before scheduling the work.

And not every idea got off the ground. For instance, a plan to save on cooling by using fresh air didn't fly because of the need to control contaminants entering the room where mushrooms were growing.

"Robust discussions" were held on this idea but the innovation failed to meet the edict that quality must not be compromised.

"You can take small steps, dip your toe in and make sure it isn't going to impact on quality," said EECA account manager Peter van Meer.

WHAT THEY SAVED

1. 4.8 GWh per year
2. $475,000 a year
3. 20 per cent energy

HOW THEY DID IT

1. Partnered with EECA to talk about how to go about it
2. Brought in energy advisory company Enercon to measure energy consumption and identify opportunities to make their operation more energy efficient.
3. Set up a team, which met monthly, to target energy efficiency
4. Identified what needed to be done and did it
5. Banked the savings

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