



## Industry project for smarter energy use

### Case Study: Matthew and Allison Cahill, Rathdowney

Matthew and Allison Cahill from Hillview near Rathdowney in Queensland, milk an average of 270 cows through 5 robotic machines on their property. The cows are fed a total mixed ration diet on a large feed pad which is flood washed 4 times a day.

The Cahills were interested to understand how they could improve their energy efficiency and signed up for an assessment with Dairy Australia. Assessments on robotic dairies are challenging as understanding where energy is being used and comparing with benchmarks is difficult because there are a limited number of robotic dairies in operation and each has their own differences in brand of robot, version and number of units. Robotic systems also have increased automation built into them which makes it less clear when energy is being used.

Unlike conventional systems where farmers are at the dairy shed at a set period of time for milking, the nature of continuous milking in robotic dairies means that milking times are undefined and it is more difficult to get accurate time frames of milk vacuum pump run times and compressor run times.

The data is available in the software that monitors the robot, but can be difficult to extract. For the energy assessment, estimates based on discussions with the farmers and the technicians that installed the equipment were used.

For the Cahills, the assessment highlighted some key potential areas for saving on energy use. Milk cooling was an area that could be improved by the installation of a plate cooler as a milk pre-cooling system which could result in savings of approximately \$2,100 per year. The installation of a heat recovery unit to pre-heat water could estimate \$3,100 per year. The effluent pump in the sump was also identified as in need of an upgrade. Mr Cahill recently replaced the 5Kw sump pump with a 2.7Kw chopper pump and saw some great changes.

The Cahills commented “The new pump cost less than the previous one did and is almost half the size. Yet the old pump would work for over 3 hours a day and this chopper pump only needs to work for less than an hour”.



Matthew Cahill (left) with Chris Harding and Nick Bullock (right) of NBA Consulting.

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