

Energy Efficiency in Dairy Sheds

Case Study: Losses from Water Heating Systems



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Monitoring of the electricity used for water heating in nine dairy water heaters showed that on average, each water heater was losing heat at the rate of 10 kWh per day. Given that a typical cylinder may only use 40 kWh each day to reheat one load of water, the losses could

represent 20% of the total electricity used for water heating.

In general, the cylinders themselves are well-insulated but there are usually other sources of heat loss as shown in the photographs below.



A brand new water heating system. The water cylinders are well insulated but the steel pipework is completely bare of insulation and its usually hot.



This leaking valve was losing hot water at the rate of 144 litres per day.



The water in this feed tank was hot – note the condensation on ceiling. This was thought to be due to hot water feeding back from the cylinder because there was no check valve in the line.



The hot pipework is often used by dairy shed staff to dry their wet clothing

A thermostat set at a temperature greater than 85°C is also a source of unnecessary heat loss. Check the thermostat setting by running some water into a jug and measuring the temperature with a reliable thermometer.