REDUCING ENERGY COSTS ON YOUR PIGGERY

UNDERSTANDING ENERGY IN PIG PRODUCTION

Problem

Energy sources such as electricity, fuel and gas are a significant cost for pork producers, as prices have risen by 25 to 40 per cent in recent years. Energy sourced primarily from limited fossil fuel reserves also has an environmental cost. Alternative energy sources and methods for reducing energy use need to be considered in Australian piggeries to reduce energy costs and ensure environmentally sustainable production.

Project

Understanding energy in pig production covers a number of topics including how to monitor energy use, understanding electricity tariffs and provides heating, pumping, lighting and ventilation benchmark data. The manual also discusses potential alternative energy sources for Australian piggeries.

Value for Producers

Producers who implement the information outlined in the manual will be able to better understand, compare, analyse and determine measures to reduce or improve their energy consumption. This will help them to reduce energy costs and produce more environmentally sustainable pork.

Recommendations

Measuring actual energy consumed by equipment in the piggery can assist in reducing energy bills. There are several tools which can be used to measure actual energy use. These include single phase monitors used on specific equipment such as heat lamps and pads, lights and small pumps, and circuit board monitoring used to compare energy use between sheds.

It is important to understand which retail category the piggery is allocated to and whether they are classified as small or large retail customers. However, these tariffs have higher service fees and require a smart meter. Brokers may be able to assist producers to work out the best tariff type and best offer from different retailers.

Biogas and solar cells have the potential to reduce electricity bills of piggery operations and reduce their carbon footprint. Each business will need assess the suitability of these alternatives for their business.

The largest energy consumer in piggery sheds is the heating of farrowing sheds and crates. Farrow room heating consumes an average of 10 kilowatt-hours per pig per year with a range of 5 to 25kWh per pig per year. Factors which influence the selection of heat source include shed design, management and the lowest watts per crate which provides adequate heating for piglets. LPG can be a possible cost-effective heat source when compared to electricity.

Pumping water can use an average of 10 per cent of total farm energy, at around 1.2kW per pig per year. The amount of energy used by a pump is influenced by pump efficiency, pump suction line, motor efficiency, pipeline and fittings, friction, and leaks.

Ventilation can make up an average of 6 to 9 per cent of total shed energy costs and average 1.5kWh per pig per year. The up-front cost, ongoing running cost and horsepower need to be considered when purchasing and installing fans. Automatic controls, leaks, drafts, and maintenance can affect a fan's performance and energy use.

Electricity consumed by lighting in piggeries is generally a small proportion of overall energy bills, contributing to 6 per cent of total energy use in farrow to finish and farrow to wean operations, and 2 per cent for wean to finish operations. The most commonly used light in a pig shed is a fluorescent tube as they are cheap. LED tubes are an energy efficient alternative. However, they are more expensive to purchase.

More Information

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