



Biogas for piggeries

WHAT IS IT?

Biogas is a renewable source of energy that can be produced from organic matter, such as piggery effluent.

It is produced naturally when pig manure decays in places where oxygen is absent, such as the bottom of a treatment lagoon. It is a source of renewable energy for a pork producer which can reduce or eliminate energy costs or earn income from export of electricity to the grid.

However, if untapped, biogas contributes to 60 per cent of the total on-farm greenhouse gas emissions for Australian pork production.

To date, biogas use on-farm has been considered most economical for larger piggeries (1000+ sows farrow-to finish). However, a 2018 case study has demonstrated biogas can be viable in a medium-sized production system too.

On a 535 sow farrow-to-finish piggery, the estimated payback period of implementing biogas was 6.3 years, after a capital investment of \$615k.



WHY USE BIOGAS?

Biogas can be an efficient way to close the loop – ensuring that on-farm waste and effluent is repurposed to generate energy for the piggery.

Of the direct energy sources required on-farm, electricity is the most pressing need. The Australian pork industry is heavily reliant on reliable and affordable energy supplies.

Taking the piggery off the grid can help with the long-term cost of electricity, as it can in some cases completely replace the external power supply. Effluent is a natural by-product produced by pigs, and so biogas is effectively free fuel.

Biogas offers a great opportunity to invest in becoming partially or fully energy self-sufficient, reducing power costs as well as greatly reducing Scope 2 carbon emissions.

HOW DOES IT WORK?

Effluent produced by pigs can be captured in anaerobic ponds, or large tanks, where it is broken down into three components:



Liquid -
can be used
for irrigation



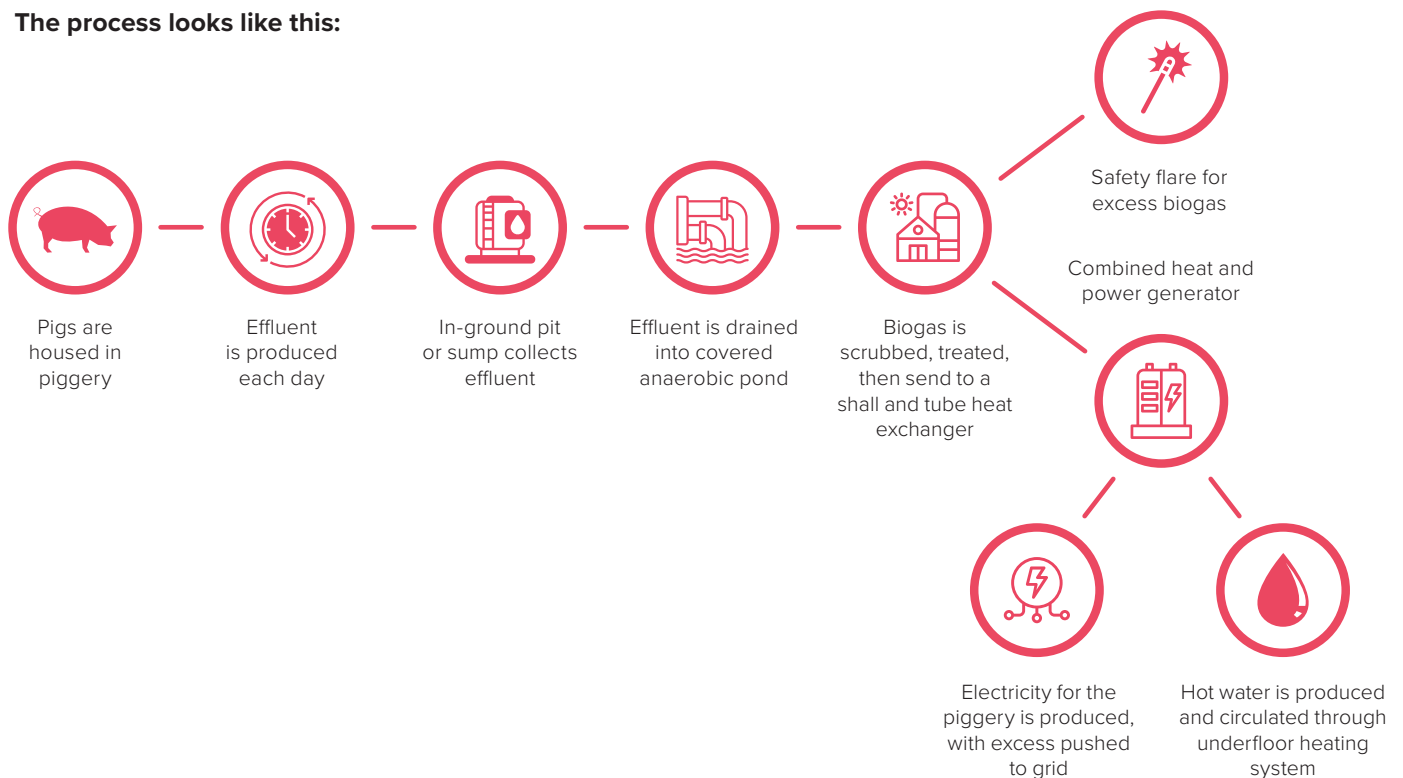
Solid -
'sludge' which can
be used as fertiliser



Gas -
biogas

The simplest way to capture biogas is by placing a non-permeable plastic cover, made of polyethylene, over treatment lagoons to form a tight seal.

The process looks like this:



BENEFITS

Biogas can be used on farms to generate electricity and therefore reduce running costs. The capture and use of biogas also provides two additional benefits to piggeries:

1. There is less odour from covered effluent ponds like the ones used in biogas set ups, and

2. Methane (one of the main components of biogas) is captured and used rather than released into the atmosphere as a greenhouse gas.

MORE INFORMATION

For technical information or a copy of the Bio-Energy Support Program resources, contact APL's Sustainability team at sustainability@australianpork.com.au

If you're interested in implementing biogas on your piggery and want to know if it's a viable option, please contact our Sustainability Project Officer Tim Morley-Sattler at tim.morley-sattler@australianpork.com.au