Department of Primary Industries

OFFICE OF AGRICULTURAL SUSTAINABILITY & FOOD SECURITY

Case study: Using gas to cut production costs - David Ronald, 'The Point' Tamarang

July 2013

Enterprise

David Ronald, 'The Point' Tamarang NSW, farms 1700 hectares. Summer crops consists of sorghum, cotton, sunflowers and summer legumes with emphasis varying each summer depending on returns and planting opportunity. Winter copping consists of wheat primarily, with an occasional attempt at less reliable winter crop alternatives depending on circumstance. David has 376 ha under pivot irrigation consisting of three 72 ha pivot circles and one fixed 160 ha pivot used for both summer and winter cropping. In recent years he has converted his irrigation bore pumps from diesel to compressed natural gas.

Background

When the Dubbo to Tamworth gas supply pipeline was put through his property, David took the opportunity to install a system that allowed him to use compressed natural gas as an energy source for some of his farm operations.

As gas in the supply pipeline is moved under high pressure, it needed to be decompressed to a suitable pressure to enable on-farm use. David and his neighbour shared the cost of installing the required decompression infrastructure. David is metered and charged for his gas usage.

What is compressed natural gas?

Compressed natural gas (CNG) is natural gas, consisting mainly of methane, that has been compressed, but unlike liquefied natural gas remains in gaseous form. It has been used as a vehicle fuel in Australia for over 25 years.

CNG is a cleaner fuel than diesel and many other traditional fuels, producing lower carbon dioxide emissions, greenhouse gas emissions and particulates. CNG has a much higher ignition temperature than diesel, making it more difficult to auto-ignite and therefore safer.

Figure 1: David Ronald in front of his bore pump powered by compressed natural gas.

The benefits

Advantages of compressed natural gas

The use of CNG has meant that David has reduced his demand for diesel and therefore reduced the cost of production and increased returns on his irrigated winter and summer crops.

With the rising cost of diesel David saw benefits into converting to a cheaper energy source. David's irrigation bore pump is powered by CNG. While the bore pump still requires a small amount of diesel as a back-up, he now fills the tank once a cropping season rather than weekly.

David says that by switching to CNG he reduced the energy cost of running his irrigation bore pumps by 40 to 50%. With this saving he recouped the cost of switching to CNG within two years.

The supply of CNG via a pipeline to the front gate has many advantages. Unlike diesel there are no transport costs and there is no need to manage supply levels to ensure sufficient fuel is available on-farm to undertake planned operations. Apart from the initial cost of tapping into the pipeline the gas is able to be supplied on demand.

Future growth

There is also potential for CNG to be used to power other on farm machinery. It is intended that CNG will be powering tractors in the future which will further reduce production costs and will also reduce carbon dioxide and nitrous oxide emissions.

Figure 2: The remote monitored gas meter at 'The Point'.

Amenity

The only surface infrastructure on David's property is the gas pipeline off-take and decompression unit which is enclosed within a chain mesh fenced area that is approximately 10 X 15 metres for access to the main supply pipeline. The pipework for moving the gas to the bore pump is buried underground. Other infrastructure includes signage where the pipeline passes through the property. This area is able to be used and is able to be grazed.

Figure 3: Signage of pipeline through the property 'The Point'. Grazing is permissible over the pipeline (arrow indicating pipeline direction).

Figure 4: 'The Point' irrigated by pivot supplied by compressed natural gas powered bore pump.

Advice to producers

The use of CNG has the potential to reduce producer's costs significantly. It is important that producers be well informed before they make the decision to connect and seek guidance from others that are currently using CNG. It is important that producers are aware of the landholder guidelines and how to negotiate an access agreement with gas operators.

Compensation for your land being used by gas companies requires special negotiation skills. This may require the assistance of a professional.

Further information

Additional information on the coal seam gas industry in NSW is available at:

www.resources.nsw.gov.au/landholder-information

www.resources.nsw.gov.au/community-information/coal-seam-gas

www.dpi.nsw.gov.au/factsheets

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