

Using Bagasse for Bioenergy

This is the fourth in a series of bioenergy bulletins produced by the Clean Energy Council to help you understand the key benefits of bioenergy. As we move towards a clean energy future, bioenergy has huge potential to help Australia achieve its targets for renewable energy and the reduction of carbon emissions. These bulletins will help you understand this potential.

What is bagasse?

When sugarcane is squeezed for its juice, a fibrous pulp material is left over. This material is processed into a usable form called 'bagasse'. For each 10 tonnes of sugarcane crushed, nearly 3 tonnes of wet bagasse is produced.

Bagasse is typically used to produce heat and electricity in sugar mills (this is known as cogeneration), but can also be used for a variety of other purposes such as to make paper, cattle feed and even disposable food containers.

Bagasse in Australia

Australia's sugar industry has used bagasse to meet its electricity and heat requirements for over 100 years. Today, bagasse is a major contributor in the bioenergy sector - accounting for over 60 per cent of Australia's dedicated bioenergy capacity.

There are currently 24 sugar mills and four sugar refineries in Australia, supplied with cane from 4000 cane farm businesses. Sucrogen is Australia's largest producer of renewable energy from bagasse. Its current generation capacity of 197 megawatt (MW) is used to operate its eight sugar mills, with enough surplus available for export to the Queensland power grid to power about 30,000 households a year.

In Australia the crushing season generally lasts about 22 weeks. During the off-season, bagasse is unavailable so sugar mills need to use alternative fuel supplies in order to generate power year-round. Most sugar mills have traditionally used coal during the off-season, but are now considering low-emission alternatives, such as co-firing with wood pellets. However, the pellet market in Australia is still new and requires government support to overcome supply and costing issues. For more information on wood pellets, see Fact Sheet 2: Using pellets for bioenergy.

Benefits for energy from bagasse

Bagasse offers many unique benefits, such as:

- It helps sugar mills to meet 100% of their energy needs. This is important, as sugar milling is highly energy intensive. Furthermore, sugar milling seasons often coincide with peak demand loads, so sugar mills can benefit immensely from the opportunity to sell surplus electricity to the grid at peak power rates.
- The facilities needed to generate heat and electricity from bagasse are often located at or near the sugar mill. Generating heat and electricity at the point of energy demand removes the need for costly transportation of the bagasse; involves minimal transmission and distribution costs; and reduces network losses and augmentation.
- It plays an important role in helping Australia achieve its Renewable Energy Target. In the 2010 generation year alone, just over 500,000 Renewable Energy Certificates were created by energy generated from bagasse.
- Energy from bagasse generates less greenhouse gas emissions than conventional fossil-fuel generation. In addition, if bagasse were left to rot, it would break down and release greenhouse

gases, particularly methane, which is 27 times more dangerous to the ozone than carbon dioxide.

- Australia's sugar mills help to drive the development of many coastal communities and underpin the economic stability of many rural townships.

The technology to produce energy from bagasse is ready today and has a proven track record, delivering reliable energy to industry and households. With the right policy support, bagasse can be used now to meet Australia's carbon emissions and renewable energy targets. The need to reduce greenhouse gas emissions is now a policy reality – so Australia's bagasse resources must play a vital role as part of Australia's clean energy future.