

Hume Highway Goes Green

As part of their environmental strategy, the Hume Highway Woomargama Alliance has appointed Green Power Solutions to install a bio-fuel power station to power the new site offices at the Woomargama Bypass.

The offices accommodate up to 120 staff and the Alliance has proactively enforced ecologically sustainable principles to reduce its carbon footprint.

The option to supply carbon neutral energy from bio-fuel generators was a key strategy. This single action will potentially reduce the Alliance's carbon footprint by an estimated 81 tonnes of CO₂ per month.



The bio-fuel generator package, powered by 100% bio-fuel is the first of its kind in Australia. The bio-fuel is made from renewable feedstocks such as tallow and recycled cooking oil, and fits within the Alliance's sustainability principles.

Green Power Solutions needed to overcome a number of challenges to meet these criteria:

1. Engine manufacturers will not openly warrant their diesel engines using 100% bio-fuel.

With over 2 years of continuous testing their fleet of generators, without a mechanical failure, Green Power Solutions are prepared to warrant the engines in-house.

2. Tallow-based bio-fuels can solidify when operating in temperatures expected to fall below zero degrees.

The team at Green Power Solutions developed a unique heated fuel storage and delivery system. Using a combination of solar energy and heated water, the bio-fuel is kept at a constant operational temperature. The bio-fuel is delivered to the generators day tanks in a constant loop ensuring there is no static fuel in the lines to be exposed to the elements and risk isolated blocking.

The generators are 3406 CAT powered, rated at 365 KVA each and have been set up to run continuously on 100% bio-fuels for the life of the project.

The two generators (one run, one standby) are vent ducted to each other to share the heat from the running unit to maintain as close to normal temperature in the standby unit. This ensures fuel in the lines or pumps do not see low temperatures and therefore the standby unit is thermally prepared to come online.

The entire operating system is linked via a data logger and modem transmitter to Green Power Solution's Head Office in Melbourne. Managing Director, Danny Williams says, "We monitor both the fuel system and engine functions remotely to ensure that we provide uninterrupted power supply to the Alliance."

With the bio-fuel power system in place, the Alliance is now exploring options to further utilise this "Green Power". By connecting back into the transmission grid, the Alliance can provide renewable power supply solutions to the town of Woomargama.

A great initiative by the Hume Highway Woomargama Alliance for our nation's Premium Super Highway.