



Prime power

> Case History

Foong Lee Sawi Minyak Palm Oil Mill,
Perak, Malaysia



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Where:

Foong Lee Sawi Minyak Palm Oil Mill, Perak,
Malaysia

What:

One QSX15G8 powered genset added to the existing two NT855G6 and one KTA19G4 powered gensets, all from Cummins Power Generation, running in parallel with a steam turbine generator

Purpose:

To provide prime power to meet the requirements of the palm oil plantation and oil mill which increased its capacity from 40 tons to 60 tons

Primary choice factors:

Lower fuel consumption, product reliability, durability, after-sales support, and the capability to parallel with existing steam turbine generator and gensets of different ratings

Increasing palm oil production in Malaysia with assistance from Cummins Power Generation

PERAK, MALAYSIA — Malaysia is the largest producer of palm oil in the world. While the demand for the product is mainly for edible purposes, the market for non-edible oleochemicals obtained from palm oil has also been registering significant increases. The principal markets for Malaysian palm oil are China, the European Union, Pakistan, USA, India, Japan and Bangladesh.

Furthermore, with the rapid rise in the price of petroleum-based fuels and the need to develop renewable energy resources, interest in palm olein blended diesel and palm oil biodiesel has become strong, resulting in further investments in palm oil plantations.

The Foong Lee Sawi Minyak Palm Oil Mill in Perak, Malaysia, has been in operation for about 20 years. The mill produces palm oil and palm kernel oil from oil palm fruit grown in the plantations. The fibrous residue from the oil palm fruit, after the oil has been extracted, together with the shell of the palm kernel nut, are used as fuel for a boiler which generates steam to run a turbine. The steam turbine is rated at 1,200 kWe.

Operating in parallel with the steam turbine are two NT855G6 and one KTA19G4 powered gensets, all from Cummins



C550 D5 genset installed and ready for paralleling with the steam turbine.



Technicians putting the finishing touches to the control wiring.

Power Generation. Together with the steam turbine, the gensets from Cummins Power Generation were able to meet the prime power requirements of the palm oil plantation and palm oil mill which had a capacity of 40 tons.

When the owners decided to increase the capacity of the palm oil mill to 60 tons, a QSX15G8 powered genset from Cummins Power Generation was selected to provide the additional power requirements. The new genset was commissioned in late 2007 and has since been in operation, clocking up to 14 hours daily.

“... the additional fuel savings possible with the QSX15G8 encouraged the customer to select this engine, to complement the other three and enable the capacity of the palm oil mill to be increased.”

For this particular installation, the supplied QSX15G8 is manually paralleled to the current plant system. This is made possible by the PowerCommand® AUX101 Input/Output Module which enables the PCC 2100 PowerCommand Control System to have remote voltage and frequency adjustment which is crucial to any manual paralleling operation.

“Initially the customer preferred to purchase a KTA19G4 engine due to the fact that they have one unit running in their plant and they are pleased with the durability and robustness of that model. However, the additional fuel savings possible with the QSX15G8 encouraged the customer to select this engine, to complement the other three and enable the capacity of the palm oil mill to be increased,” said Mr. K. P. Koh from Scott & English (Malaysia) Sdn. Bhd., the Cummins distributor in Malaysia.

PowerCommand for control
The field-proven PowerCommand Control System offers several attractive features, including integrated digital governing and voltage regulation, analog and digital

metering, digital engine monitoring systems, smart-starting systems which regulate the fuel system based on engine temperature to improve stability and starting time and limit smoke, battery monitoring systems that test the genset batteries, AmpSentry true alternator protection, and more.

Microprocessor controls built into the PowerCommand system allow the genset and transfer switch to access critical performance data and communicate that data to each other, as well as to other building management systems. The control capabilities include diagnostics, testing, feedback functions and corrective actions for enhancing system reliability and maximizing building operations. The controls run continuously, which means PowerCommand can detect failures even when not in use.

The PowerCommand Control 2100 is suitable for use on a wide range of generator sets in nonparalleling applications.

PowerCommand AUX101 Input/Output Module
The PowerCommand AUX101 Input/Output Module contains eight Form-C relay output sets and eight discrete/analog inputs. Each AUX101 input can be configured as discrete or analog. Discrete/analog inputs can be used for system fault expansion and/or genset metering. Relay outputs can be used for controlling equipment such as motors, louvers, lamps, fans and pumps. The relays may be configured individually from the genset control operator interface or using InPower Software.

The AUX101 is compatible with genset controls supporting the PowerCommand Network and requires a twisted pair connection. The AUX101 is designed for proper operation in ambient temperatures from -40° C to +60° C, and for storage from -40° C to +80° C. Modules will operate with humidity up to 95%, noncondensing.

For more information about integrated prime power systems, contact your local Cummins Power Generation distributor or visit www.cumminspower.com.

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