Prime power

> Case History
Kanowit Palm Oil Mill, Sibu, Sarawak, East Malaysia

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Cummins Power Generation

Where:
Kanowit Palm Oil Mill, Sibu, Sarawak, East Malaysia

What:
One Cummins Power Generation generator set, powered by a QST30G2 engine, rated at 640 kW and two Cummins Power Generation gensets, powered by KTA19G4 engines, each rated at 409 kW, to complement the steam turbine

Purpose:
To start up the boiler, as well as to generate power for the electrical requirements of the plant and offices, and the residential units in the area, when the steam turbine is not operational

Primary choice factors:
Previous track record, product reliability, efficient after-sales support and parts availability

Cummins engines drive prime power for palm oil factory and housing in remote East Malaysia

SIBU, SARAWAK, EAST MALAYSIA — Worldwide production of palm oil nearly doubled during the period 1990 to 2001, in response to increasing demand. Leading both the production and export is Malaysia, which increased the land area planted with oil palm by more than 150 percent during the period. Today, the industry employs around 300,000 people in the eastern and western states of the country.

Malaysia's output of palm oil is approximately 12 million tons, which is more than 50 percent of the approximately 23 million tons produced annually throughout the world. The country exports close to 11 million tons, which exceeds 60 percent of the total international exports of about 17 million tons.

The Kanowit Palm Oil Mill, which commenced operations in July 2003, is wholly owned by listed Malaysian company, Boustead Holdings Bhd. The factory is located in Sibu, Sarawak, in East Malaysia.

The plant processes oil palm fruit into crude palm oil and palm kernel. Approximately 150,000 tons of fruit are processed in a year, yielding about 32,000 tons of crude

Cummins Power Generation gensets are used in part to start and power up the boiler for the steam turbine.

Paralleling switchgear automatically synchronizes gensets with the steam turbine.

palm oil and 7,500 tons of palm kernel oil. Since the palm trees in the plantations owned by the company are still growing, the output of fruit and, therefore, the palm oil as well, is expected to increase in the coming years.

As there is no grid power supply in the area, the mill generates its own electricity for its operation, as well as to cater to the needs of the residents in the area.

"Since this is a prime generation responsibility in a remote area, our product reliability and the after-sales service are particularly important," said Mr. Alex Tan from Scott & English (Malaysia) Sdn Bhd, the Cummins distributor in Malaysia.

The factory is operational 16 to 20 hours a day throughout the year, except during the 10-day maintenance shutdown as required by government regulations.

After the extraction of the oil from the oil palm fruit, a fibrous residue is left behind. This residue, together with the outer shells of the palm kernel nut, are used as the fuel for a waste-fired boiler. The boiler generates steam to drive a turbine that produces 800 to 1000 kW of power.

One of the Cummins Power Generation gensets is powered by a QST30G2 engine, rated at 640 kW and another two Cummins Power Generation gensets are powered by KTA19G4 engines each rated at 409 kW. They are used in a prime application at the Kanowit Palm Oil Mill to complement the steam turbine.

The gensets are run to start up the boiler every day. Also, during the four to eight hours when the plant and the steam turbine are not operational, Cummins Power Generation gensets provide the minimum power requirements of the plant such as emergency lighting, as well as the requirements of the residential units in the area.

Synchronization of the gensets with the steam turbine is achieved automatically via a switchboard. At the commencement of the day's operations, the gensets are run to start up the boiler. The steam from the boiler drives the steam turbine. Both gensets and steam turbine are operated together and, after synchronization, the gensets are stopped. Likewise, the gensets are started and synchronized with the steam turbine, before the turbine is stopped, at the end of the day.

"Since this is a prime generation responsibility in a remote area, our product reliability and the after-sales service are particularly important," said Mr. Alex Tan from Scott & English (Malaysia) Sdn Bhd, the Cummins distributor in Malaysia.

"We had the advantage of dealing with a regular customer who had given us the opportunity to prove the quality of Cummins Power Generation gensets, and we had already installed 10 units since 1985, at four locations," Mr. Tan added.

Before the Kanowit project, Cummins Power Generation gensets had already been installed at Boustead's palm oil mills in Johor Bahru (three gensets powered by KTA19G4 engines), Bintulu (two gensets powered by KTA19G4 engines and one genset powered by a LTA10G3 engine), Tawau (one genset powered by a KTA38G5 engine and one genset powered by a Cummins KTA19G2 engine) and Taiping (one genset powered by a Cummins QST30G2 engine).

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

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