



Rental Power

> Case History

Indian Rayon and Industries Ltd.,
Gujarat State, India

Our energy working for you.™



**Power
Generation**

Where:

Viscose filament yarn manufacturing facility
at Veraval, Gujarat State, India

What:

Two 1000 kVA diesel generating sets with
PowerCommand control from Cummins Power
Generation

Purpose:

Meet the demand for extra power while
synchronizing with the power output of the
existing turbine system

Primary choice factors:

Uninterrupted, trouble-free, low-cost power;
fast-track system design, installation and
commissioning; reliable multi-fuel power system

Leading viscose filament yarn (VFY) manufacturer avoids downtime with 2000 kW Rental Power system

VERAVAL, GUJARAT STATE, INDIA — Indian Rayon and Industries Limited is a flagship company and diversified conglomerate within Aditya Birla Group. The company is a major player in its key businesses — viscose filament yarn (VFY), carbon black, insulators, branded apparel, fertilizer and textiles — both in India and internationally. Indian Rayon's viscose filament yarn is produced at a modern plant at Veraval in the Indian state of Gujarat. This facility produces over 400 shades of the company's RayOne brand of viscose filament yarn in fine to coarse deniers ranging from 75 to 1200.

As part of the company's vertical integration strategy, the Veraval plant added its own caustic soda production process using membrane cell technology from Germany. The new production process added to the facility's already considerable power requirements.



The Rental Power units were fully synchronized with the plant's existing 16 MW turbine power plant to avoid costly downtime.

Electric power at Indian Rayon and Industries was supplied by an existing large-scale power system — 16 MW turbine grid. However, that turbine system was operating at maximum capacity and the addition of even limited draws on its resources was likely to cause the plant to shut down. It was determined that additional power would be needed to run the caustic soda process. As the company considered its options, one somewhat unusual demand increased the complexity of the project: the additional power would have to be synchronized with the facility's turbine generation system. Synchronizing with the turbine grid's power output at 11 kV, 49 Hz was one of the unique requirements met by Rental Power from Cummins Power Generation Inc.

Meeting the customer's requirement of synchronizing with their existing turbine grid output at 49 Hz, 415 V was one of the Rental Power project's challenges.

Viscose filament yarn a major export

India ranks second only to China in viscose filament yarn production. Made from natural fibers, VFY feels like cotton, drapes like wool, sheaths and clings like satin and has the luster and feel of silk. The yarns are used in making apparel and upholstery. Indian Rayon and Industries accounts for 40 percent of VFY exports from the country to markets around the world.

To insure that Indian Rayon's VFY production would continue uninterrupted, the company decided to add temporary power to help prevent the costly plant shutdown that could result from power shortages.



The two 1000 kW units were installed just 25 days after the order was placed.

Rental Power supplements turbine system, synchronizes with unique power output

The power system provided by Cummins Power Generation consisted of two 1,000 kVA diesel generating sets. A major challenge for the supplemental power system was the customer's peculiar requirement of synchronizing with the existing turbine grid at 49 Hz, 11 kV. This synchronizing goal was met by retrofitting the two gensets with Cummins Power Generation's proprietary PowerCommand® control and customized control panels operating Low Drop-Out (LDO) regulators at 60% load factor.

The PowerCommand control allowed the synchronized power output and also added a wide range of integrated genset control features that eased routine operation of the power plant. The LDO kits provided a way of reducing operating costs by adding fuel flexibility to generate power at a lower cost per kWh than the power from the local grid.

Fast turn-around, successful project

The order-to-commission time for the generators sets project was just 25 days. Both of the Cummins Power Generation generator sets have delivered excellent performance and maintained more than 95 percent uptime, in turn helping Indian Rayon and Industries contribute its wide line of viscose filament yarns to the world's markets. Based on this success, the existing contract is expected to be renewed for a second term.

For more information about Rental Power or other energy solutions, contact your local Cummins Power Generation distributor or visit www.cumminspower.com/rental.

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