



# Cogeneration

## > Case History

The INDITEX Group, Spain



## Power Generation

**Our energy working for you.™**

### **Where:**

INDITEX Group Logistics Center, Tordera, Province of Barcelona, Spain

### **What:**

2.3 MW cogeneration plant powered by natural gas to supply hot water, low-pressure steam and cooling to the entire distribution center

### **Purpose:**

To optimize building operations by improving energy performance and also reducing carbon dioxide emissions

### **Primary choice factors:**

High reliability of Cummins Power Generation solutions as proven at other INDITEX Group facilities

## **INDITEX Group turns to Cummins Power Generation for power efficiency and reliability**

TORDERA, BARCELONA, SPAIN — The town of Tordera with 13,000 inhabitants hosts one of the most important distribution logistics centers for the INDITEX Group — a group with more than 3,100 outlets in Europe, North America, Asia and Africa. The center includes five distribution facilities totaling approximately 200,000 square meters, and supplies more than 1,050 shops with orders every week.

Three of the INDITEX Group's eight commercial brands or sales formats are managed at the Tordera distribution logistics center, including the urban fashions of Massimo Dutti, Bershka for younger customers and lingerie under the Oysho label.

### **Maintaining a controlled climate was key**

As a business in the textile industry, consideration must be given to climate control. Facilities containing textiles like clothing depend on constant air conditioning to prevent product loss from mold or mildew. The facilities also depend on an environment that supports sophisticated electronic equipment. With the facilities' high level of distribution center automation, orders can



Two Cummins Power Generation natural gas generator sets are the heart of INDITEX Group's cogeneration system in Tordera, Spain.



Shipments from the Tordera logistics center go out daily to help generate annual revenue for the INDITEX Group of more than 8,196 million euros.

be delivered within an average of 24 hours to shops in Europe and a maximum of 48 hours to shops in America or Asia.

Another important consideration was the potential for self-supply of power. In the event of grid failure, the facility wanted to be able to continue its product distribution activity of supplying products to the shop network.

### **Cogeneration was the right solution**

A cogeneration (CHP) system from Cummins Power Generation Inc. provides the INDITEX Group with reliable power as well as thermal energy for heating and meeting the facility's steam requirements. Two 1160GGKA lean-burn natural gas generator sets operate in parallel with the grid to generate 2.3 MW of electricity — power that can be used by the facility or returned to the grid. In the event of a grid failure, the power plant is designed to operate in "island mode" to provide emergency power to all five of the distribution facilities.

Thermal energy generated by the cogeneration power system is used for both hot water (heated to 65 degrees Celsius) used by the heating plant and for creating low-pressure steam — 2 tons per hour at 2.5 bar — to power the steam system used as a heating complement. In the summer, this steam is driven to an absorption chiller that produces approximately 1,000 kW of cooling as chilled water at 7 degrees Celsius. This absorption cooling operates as base load, avoiding the operation of mechanical compression equipment.

The cogeneration system is housed in a separate mechanical services building that also contains the heating and cooling equipment, transformer center and the fire protection systems for the entire center.

### **System optimizes consumption while ensuring fashion shipments**

The natural gas generator sets from Cummins Power Generation are equipped with general protection control switchboards that integrate with a centralized programmable logic controller (PLC) and remote communication capabilities for quickly detecting shutdowns or faults. The generator sets and their main control panel are connected to the building management system, which optimizes the energy consumption of the building and regulates the five facilities from a centralized location.

The INDITEX Group distribution logistics center in Tordera now benefits from a controlled climate with a reliable power source allowing timely shipments to 64 countries around the world.

For more information about cogeneration power systems or other energy solutions, contact your local Cummins Power Generation distributor or visit [www.cumminspower.com/energysolutions](http://www.cumminspower.com/energysolutions).

**Our energy working for you.™**

[www.cumminspower.com](http://www.cumminspower.com)

© 2008 Cummins Power Generation Inc. All rights reserved. Cummins Power Generation and Cummins are registered trademarks of Cummins Inc.

"Our energy working for you." is a trademark of Cummins Power Generation.

F-1811 Rev. 2/08 (2007)

