

# Bopisa Plastics Manufacturing

## Manufacturing

### The Challenge

México's plastics industry has matured significantly over the years and has gained sophistication with the growth of the country's automotive, electronics and medical sectors. As the 12th largest consumer of plastics in the world (2016), México uses close to 143 pounds (65 kilograms) per capita, the highest per capita consumption rate of plastics in Latin America. Overall, the country's economy has performed well relative to other major Latin American countries, largely because of its thriving manufacturing sector.

In early 2015, Mexican plastics and molds manufacturer Bopisa decided to begin its search for a clean and efficient energy solution that would replace its existing generators, supply reliable electrical power and condition the on-site water supply for its manufacturing operation in Guadalajara, Jalisco. The goal was to increase the energy efficiency of the plant while effectively reducing the company's rising operational costs. After evaluating numerous solutions, Bopisa turned to Capstone Turbine distributor for a full site assessment. A Capstone microturbine energy system was found to not only align with the company's vision and core values, but also provide a swift three to four year return on investment.

### The Solution

CAPSTONE'S team of energy experts performed an in-depth evaluation of the plant and reported that Bopisa was



**Bopisa was able to reduce its operating costs, with the help of an absorption chiller, keeping our client happy with an innovative technology"**

### Power Profile

**Customer**  
Bopisa

**Location**  
Guadalajara, Jalisco, Mexico

**Commissioned**  
September 2015

**Fuel**  
High Pressure Natural Gas

**Technologies**

- Capstone C600 Microturbine for Grid Connect
- Absorption Chiller (CCHP)



**Smarter Energy  
for a Cleaner Future**



A natural gas-fueled C600 Microturbine reduces fuel and energy costs for the manufacturing plant.

consuming energy from the local CFE (Comisión Federal de Electricidad ) network with a billable demand contracted from 202 to 950kW. Operating with a plant load average of 761kW pe month and a maximum demand of 1,153kW, it was determined that a 600kW Capstone C600 microturbine would appropriately meet the site requirement. In addition to electrical generation Bopisa also opted to utilize the thermal energy from the microturbine's clean exhaust by installing an absorption chiller to deliver hot and chilled water to the existing water lines.

### Capstone C600 Microturbine



### The Results

Today, the Capstone C600 microturbine generates over 59 percent of the manufacturing plant's electricity with a heat consumption of 80 tons of refrigeration (TR). The Capstone microturbine generates a healthy 484kW-hours and helps the customer to avoid a 27 percent demand consignee expense. Since adopting Capstone Turbine's microturbine technology, Bopisa has reduced its energy costs by 58 percent, saving them \$350,000 USD per year.

A C600 provides up to 600kW of electrical power for CHP applications.