

# CASE STUDY



**Location:** Signal Hill, CA

**Company:** Rossmoor Pastries

**Study:** Compressed Natural Gas (CNG)



Rossmoor Pastries is a bakery located in Signal Hill, California and has been serving the Los Angeles, Orange County, and Riverside County for over 20 years. The company provides customers with everything from wedding and birthday cakes to breakfast pastries and breads. Beyond providing tasty treats to Californians, they have also taken the initiative to convert their fleet to run on

compressed natural gas instead of conventional fuels. This movement was spearheaded by company president and green thinking Charles Feder. Not only does Rossmoor Pastries support alternative fuels but Feder champions other companies and drivers to be aware of the benefits of natural gas.

## Decision Points

In 2006, Feder decided to sell his older fleet vehicles at auction and invest in replacing them with previously owned low mileage vehicles operating on CNG. Conversion kits and OEM CNG vehicles are available but Feder chose the most economic choice of purchasing these CNG vehicles. He cited the cost of conversions of at over \$20,000 per vehicle which was not economical. Feder used a grant from



*President Charles Feder in front of Rossmoor Pastries. Photo courtesy of Rossmoor Pastries.*

the Mobile Source Air Pollution Reduction Review Committee (MSRC) and a 30% tax incentive to purchase new fleet vehicles and construct Rossmoor's own onsite, private, natural gas compressor station. There were many benefits from this fleet conversion but Feder said, "I wanted to convert to CNG in order to do my part to ensure a better future and environment for my grandchildren." As a New York native he recalls flying into the Los Angeles basin for the first time and seeing the overwhelming haze that blanketed the region. Natural gas is a cleaner burning fuel that emits nearly no particulate matter (PM) when compared to conventional diesel powered vehicles. It is also domestically produced. Feder said, "With estimated natural gas reserves of 200 years in the U.S., why not use a domestic product to increase U.S. energy security and send the money to American fuel providers." Around 87% of natural gas used in the U.S. is produced here and the rest typically comes from bordering countries.

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## Fleet Facts

The Rossmoor Pastries vehicle fleet currently consists of 18 vehicles. Only one of these vehicles runs on diesel fuel. The other vehicles are CNG and consist of 14 delivery vans and three cars. The initial fleet consisted of four CNG vans and a CNG car. The initial fleet conversion took only about four months to break even on initial investment. The vehicles commonly use tank pressures of 3600 pounds per square inch (psi). The fleet averages around 600 miles a week or 30,000 miles a year from their deliveries. Fuel consumption varies between vehicles but averages around 2,000 gallons per vehicle for a year and total about 34,000 gallons of CNG per year. The vehicles operate just as conventional vehicles and regular maintenance can be done by conventional mechanics. Feder said that maintenance of the CNG components is conducted by technicians at Huntington Alternative Fuel Technology. Each vehicle can travel up to about 180 miles on each tank of CNG. There is also about a 10% horsepower decrease compared to conventional fuels but this does not affect the fleet operation.

### QUICK FACTS

**Fuel Type:** Natural Gas (CNG)

**Fuel Production:** Onsite natural gas compressor station CNG Vehicles: 17 (94% of fleet)

**Fuel Consumption:** Over 34,000 gallons of natural gas per year

**Driving Range:** Up to 180 miles

## Fuel Supply and Infrastructure



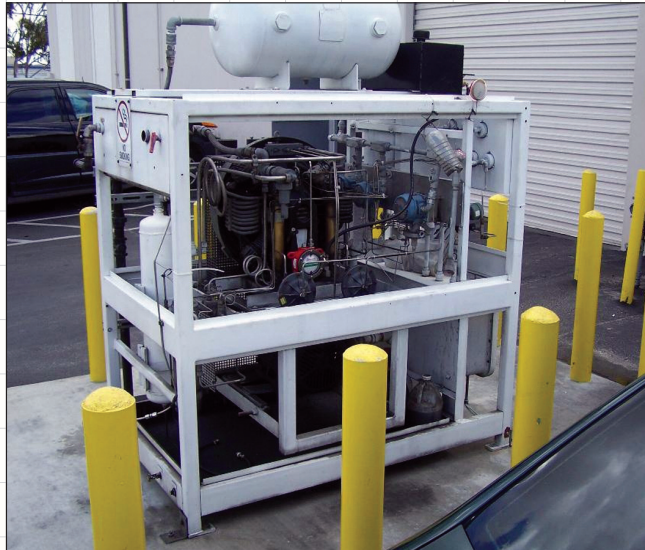
Rossmoor Pastries fleet vehicles parked next to CNG filling lines. Photo Courtesy of Rossmoor Pastries.

California is a proactive state and has multiple alternative fuel stations available for fleet fueling. Each fleet vehicle has a map of local CNG stations. Vehicles can travel about 180 miles before fueling. Each driver has a Clean Energy Credit card which can be used to fuel at public stations. However, Feder decided that an onsite CNG compressor station was more convenient and economical. The original compressor station could

produce CNG at 3600 psi at a rate of seven gallons per hour. The station has recently been upgraded to a new compressor which can produce the CNG at a rate of 15 gallons per hour. The onsite compressor station uses natural gas from a conventional natural gas line that runs to his business provided by Long Beach Gas and Oil Department. They can fuel their fleet vehicles on the same fuel that they use in their ovens! The compressor station itself was designed and constructed specifically for this application. OEM CNG fueling stations are available but Feder said most are subpar for his demands and operation.

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The fueling policy for drivers is to clear the trip odometer before departure and plan trips such that they can return within 130-150 miles. This insures the most savings by allowing for nearly all refills to occur at Rossmoor Pastries. Since they have multiple filling lines, more than one CNG vehicle can fuel at a time. They also utilize a rotating vehicle policy. If one vehicle returns near empty, then the next delivery will use another van that has been recently topped off.



*New compressor station which can produce CNG at 3600 psi at a rate of 15 gallons per hour. Photo courtesy of Rossmoor Pastries.*



*CNG fueling lines and parking spots where delivery vehicles can fuel while not in use. Photo courtesy of Rossmoor Pastries.*

### Costs

Feder also provided some facts on the costs and savings of operating on CNG. The first compressor station operated for over 25,000 hours at the old rate of seven gallons per hour. Each gallon of CNG was estimated to save about \$2.75 per gallon when compared to conventional gasoline. Over the life of the first pump alone, the total savings was about \$480,000. Added savings are also presented on maintenance since the oil can last longer before required changes. Feder also noted that in the heavily congested areas of California most roads have specific lanes for High Occupancy Vehicles (HOV lanes). These lanes are typically set aside for carpooling vehicles but since his fleet operates on an alternative fuel they are exempted and may travel in these lanes at any time. These lanes are much less congested and amounts to huge savings in fuel and time.

### Summary

Feder says that he is more than pleased and happy with his decision to use a fleet of delivery vehicles that operate on CNG. "It provides for huge savings and I am happy we use it." Not only does Rossmoor Pastries delivery sweet treats in California but they do so with petroleum consumption and emissions in mind. He is proud that his fleet can contribute to better air quality in the previously over polluted region. Operating on CNG has economical and environmental benefits. Feder and Rossmoor Pastries has seen the success of using CNG as an alternative fuel. They even use their fleet vehicles to advertise the technology at the local Long Beach Community College. Feder and the Rossmoor Pastries family are committed to being green and speak, about CNG and its benefits, at a variety of events. They also look forward to spreading the word on CNG and providing their children with a better, cleaner future.