

# **Alternative and Renewable Fuel and Vehicle Technology Program**

## **FINAL REPORT**

**Expansion of Existing CNG Infrastructure In Ontario  
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## Abstract

Ontario CNG Station ,Inc. contracted Allsup Corporation to design ,permit and construct a CNG expansion project to include two dispensers , one compressor ,three CNG storages ,electrical gearboxes for extra amperage and associated electrical and mechanical.

Ontario CNG Station Inc. owns and operates the site for the next 30 years.

The CNG expansion consist of a four hours concrete fire wall that acts as a blast separation wall as well .The wall creates an enclosure that separates three storages and the compressor from the public to create a safety zone to public in case of fire and or an explosion .

List of equipment installed:

1. One Angie compressor : 486-SCFM
2. Two high flow dispensers -3600 PSI
3. Three Square D electrical boxes.
4. One electrical transformer and Gear boxes
5. Two air fans
6. Three above ground storages
7. Two emergency switches
8. Two explosion valves
9. Electrical wiring and stainless steel tubing

Key Words: AQMD, SCAQMD,- MSRC, CNG, Ontario CNG Station Inc., CNG refueling station, Ontario CNG.

## Executive Summary

Compressed natural gas distribution and dispensing infrastructure is not readily and abundantly available. In order to meet the projected production as well as existing CNG vehicles and trucks a well-functioning network of CNG station infrastructure in greater quantities is needed. The increase of new and the expansion of existing CNG stations would insure the coverage needed for CNG vehicles especially with the new executive order by Governor Jerry Brown on May of 2015 for 40% reduction of greenhouse gases by year 2030. The greenhouse gases would include Carbon Dioxide (CO<sub>2</sub>), Oxide of Nitrogen (NO<sub>x</sub>), Carbon Monoxide (CO), and Volatile Organic Compound (VOC).

Ontario CNG Station is a public access alternative fueling station serving the community surrounding Ontario California, Ontario International Airport and the underserved I-10 corridor. Ontario CNG Station owns and operates the entire site including a circle K convenient store, an express carwash, conventional gasoline station with six gas dispensers in which two of them include diesel No # 2, two bio-fuel and bio-diesel, two electrical vehicle chargers in which one is a fast charger, four CNG dispensers in which two of them were installed with this grant, and one hydrogen dispenser with two nozzles one for 350 bar and the other for 700 bar.

Ontario CNG station is located at 1850 E Holt Ontario Ca 91761 and is conveniently located adjacent to the Ontario International Airport, less than half mile away from I-10, gateway to the Inland Empire and Las Vegas. Many drivers especially females in the consumer market prefer to fuel up in a well-lit environment with a 24 hour attendant present and clean restrooms as well as an option to pay cash for the CNG. This is a rare option with most of the CNG station in state of California.

The objective of Ontario CNG Station Inc. in construction and expanding the CNG is to provide the additional necessary infrastructure to provide more convenient and faster fueling services to the community, traveling public corporate fleet services, as well as allowing for the reduction of diesel consumption and emissions in our environment as well as State of California.

## **Introduction**

*Ontario station has been dispensing compressed natural gas for the last two years and due to the congestion, traffic, lack of storage the station has not been able to dispense more 65,000 gallons of CNG to the public and the corporate fleets. In order to solve this problem the station retained Keith Sharpe (CNG specialist, engineer) to increase capacity and ease of traffic and use . Ontario Station ultimately retained him to design, and construct the expansion of the CNG to achieve the goal of dispensing more to the public and the corporate fleets.*

## **Project Objectives**

Ontario Station's objective is as follows:

1. Remove 10,589.040 pounds of CO<sub>2</sub>, NOX, CO, and VOC per year from southern California air.
2. Increase the storage and throughput capacity for compressed natural by installing extra three storage spheres, installing extra compressor, and two fast fill dispensers.
3. Make the necessary civil, mechanical, and electrical upgrade to support the expansion of the CNG at the site.
4. Provide an incentive for the corporate fleets to use the facility.
5. Reduce air pollution in California for ourselves and future generation.

## **Project Approach**

Ontario CNG Station approach for establishing a viable long-term Compressed Natural distribution center has always revolve around the financial stability of the CNG as a product .Ontario CNG Station built the first phase of CNG station in conjunction with other profit centers such as a convenient store , carwash ,conventional fuel , diesel , bio-gas and bio-diesel . This particular approach is very essential in the long-term stability of the CNG as fuel. This approach increases the profit centers for the station therefor the station or the operator does not have to depend on the CNG as the only source of income. This project approach has resulted in a low price of CNG for our consumers and hopefully a long term environmental commitment to a better future for Southern California.

## **Project Outcomes**

*The ultimate goal for alternative fuel is its environmental impact and reduction of harmful greenhouse gases .Ontario CNG Station strives to remove Carbon Dioxide (CO2) from southern California air by pumping the maximum CNG from its facility in Ontario California.*

*Ontario CNG Station's existing facility is removing 5,294,520 pounds of (CO2) from the Southern California Air by pumping approximately 65,000 GGE of CNG per month .We strive to double that number by this expansion.*

## **Recommendations and Outreach**

In our opinion next logical objective need to accomplish a broader cohesive infrastructure support system to accomplish a nationwide alternative fuel network to support CNG, Hydrogen, bio-fuel, bio-diesel, and vehicle electrical chargers. Ontario CNG Station has designated an area for educational graphics and outreach program for public inside the station .

## **Public Benefits to California**

Advantage of Compressed Natural Gas as an alternative fuel includes A. Domestic availability .B. relatively low cost .C. Low risk of environmental contamination D. Low emission benefit. Also renewable natural gas which is a product of organic decomposition that has been processed to purity standards and has been captured from landfills and livestock operations reduces emissions by preventing release of gases into the atmosphere. Methane is 25 times stronger than Carbon Dioxide as a greenhouse gas. Overall in our opinion due to the reasons mentioned above CNG as an alternative fuel has a great positive impact in air pollution specifically in dense urban areas such as southern California.

## **Conclusions**

In conclusion I would like to submit to you as a former academician in higher education that we are in the forefront of an environmental movement not in a theoretical abstract but in a very practical sense .In my opinion we have changed the paradigm of fueling stations in years to come by removing tons of pollutants from the air and being part of the solution rather than the problem.









