

# The Past AKA In the beginning

- Total Dependence On Foreign Oil, Energy Dependence on Foreign Unstable Governments.
- Passage of Energy Policy Act And Clean Air Act recognize need for future alternatives.
- Lack of focus and poor planning created ill fated attempts to create sporadic infrastructure with little or no fleet base to support.

# Natural Gas is the Expressway to the Future!

- N.Y.S. agencies have nearly 4000 Alt Fuel Vehicles in their fleets. 1974 are CNG with 1102 being dedicated. DOT has 673 of the 1102 dedicated vehicles.
- We are approaching 40,000 gallons per month of CNG being dispensed from our facilities which is over a 200% increase from our first full month of operation.
- We are beginning to convert our large truck fleet to CNG or LNG Dual Fuel and eventually a dedicated LNG fleet.



# The Key to success is Infrastructure

- We built 30 low volume, fast fill stations in a modular design anticipating expansion.
- 26 of the original 30 sites have expanded capacity. All sites have pressure upgraded to a minimum 4200 psi storage. 18 new sites have been built and 11 more are in progress.
- LCNG will be the design for 150+ stations with no pipeline access.

We need to develop the infrastructure necessary to support interstate travel.

- CNG infrastructure does not have to be prohibitively expensive!
- L/CNG infrastructure can serve both vehicle platforms further reducing cost.
- When calculating the cost benefit of natural gas we must also consider the total clean up costs incurred with a fuel spill.

# Typical DOT 'Low Volume' Compressor Station



Storage

Dispenser

Compressor





**BARLOW ROAD, BINGHAMTON CNG SITE, REGION 9 - 3 SEPT 03**

# What have we learned to date?

- We are saving .20 cents per gallon using natural gas.
- We have extended oil change intervals 100% with no detrimental effect on the vehicle.
- We have reduced the cost of building infrastructure through competitive bidding.

# We are at a critical Transition point from past to future.

- We are near saturation of the logical locations to build CNG infrastructure. We must start building LNG infrastructure in the remaining 75% of our facilities that do not have CNG pipeline access. LNG is also the most logical fuel for the heavy duty fleet. LNG is renewable.

# Where are we going?

- Over the next 30 years we will have to replace everyone of our existing diesel and gasoline fuel facilities at a projected cost of 30-50 million dollars.
- I recommend that we instead position ourselves to close these facilities and build LCNG facilities which will fuel both light and heavy duty vehicles at a total cost of about 30 million.

# What about Hydrogen?

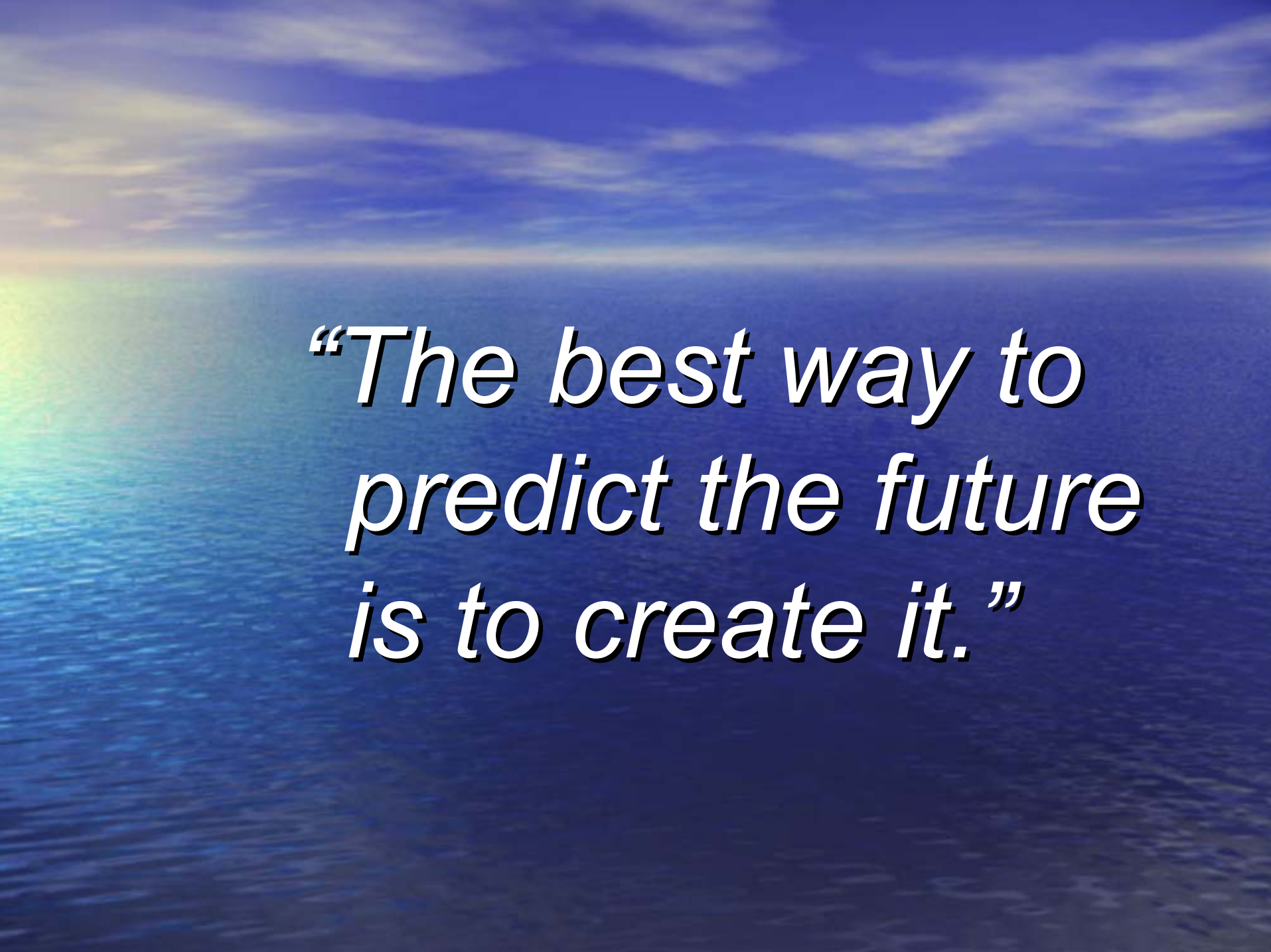
- The most efficient transition to hydrogen is through Natural Gas technology.
- Hydrogen Fuel Cell technology is inefficient and cost prohibitive now and for the foreseeable future.
- Current hydrogen fuel cell technology is impractical for the majority of transportation needs.

# Conclusions

- We should not repeat the mistakes made in the past and become dependant on any single energy source.
- Hydrogen/Fuel Cell technology is viable for relieving pressure on the power grid.
- Bio Fuel technology can displace up to 5% of our current crude oil consumption now and hopefully more in the future.

# LNG is the Superhighway to Clean Corridors

- LNG is viable for all fleet vehicles regardless of size.
- LNG does not require pipeline access, it can be liquefied and transported to remote locations.
- LNG is renewable from landfill gas and wastewater gas creating energy independence.



*“The best way to  
predict the future  
is to create it.”*