

AFVTech

Energy, we all need it! Energy is the Backbone to all industrialized nations. Since the industrial revolution, the demand for energy has and will continue to place ever increasing strain on the supply of resources and distribution networks that support them. The United States (US) economy currently only functions because of "inexpensive and adequate" supplies of energy. Disruptions of the supply chain of energy, has the potential of creating catastrophic long term consequences. The population of the world has more than tripled in the last 100 years and is poised to double that in the next seventy five years. With the massive population growth, the reserves of oil and other non-renewable energy will be consumed at an unquestionable pace. It is time to make a change, though it will not be easy, the benefits far outweigh the inconveniences!

Natural Gas, is the cleanest of all of the Fossil Fuels. Natural Gas is comprised of primarily Methane, atomically (CH₄) and is derived mostly from underground deposits. Natural Gas is ideally suited for transportation use. Natural Gas when combusted produces 30% less Carbon Dioxide (CO₂) than Gasoline. Natural gas is safe as an alternative to Gasoline and extends the life of vehicle engines because of the reduction in Carbon. The US has tremendous reserves of Natural Gas, it can also be produced economically through the gasification of Coal. Natural Gas vehicles can more efficient than Gasoline vehicles. Natural gas is lighter than air and has a much smaller window of flammability than Gasoline, making it harder to ignite if a leak was present. It cannot pool on the ground and create a low lying explosive vapor, unlike gasoline. The construction of Natural Gas vehicles (NGV)'s are performed by trained technicians. The components of a NGV are astoundingly robust, exceeding many times the strength needed to store and use in a vehicle. Natural Gas is also non-toxic and cannot contribute to ground water pollution

Hydrogen is the most common element in the universe. Approximately 75% of the universe is made of Hydrogen Gas. Hydrogen holds a significant advantages over hydrocarbon fuels. It is extremely clean when combusted, only producing water vapor and can be produced on site, avoiding transportation and distribution problems. Hydrogen is infinite, we can never run out of it. Hydrogen is most commonly produced through the reformation of Natural Gas, but can be produced through the electrolysis of water. Hydrogen can be produced from the use of renewable energy sources, such as Wind and Solar. Hydrogen when combined with Natural Gas, dramatically reduces the CO₂ and increases efficiency.

Hybrid Fuels

The use of Hydrogen and Natural Gas in a combination shows the most promise of all of the Alternative fuels. It allows us to use existing technology while benefiting from the clean burning aspects of the fuel. Emissions testing has shown that a vehicle that used 50% Hydrogen and 50% Natural Gas has a 65% reduction in CO₂ emissions and a 95% reduction in Hydrocarbon emission. AFVT has been a leader in implementing technology that will allow the dependable use of this fuel while maximizing performance and efficiency.

Some information provided by the United States office of Energy Efficiency and Renewable Energy @ www.eere.energy.gov

AFVTech is the first company to develop a bi-fuel gasoline-hydrogen bi-fuel ethanol-hydrogen vehicle. AFVTech's patented Digital Sequential Hydrogen Fuel Injection system (DHSFI) is completely compatible with OBDII and CAN Diagnostics. Learn more about emissions results [click here](#) . We believe that, by educating consumers about hydrogen and natural gas vehicles, building a safety track record and making it available now, will put "us", the United States, on a fast track to energy independence. Over the past 7 years AFVTech has been highly active in testing and developing hydrogen and natural gas technologies. Our testing and experience with using hydrogen in internal combustion engines "ICE" has lead us to develop in conjunction with the National Center for Hydrogen Technology NCHT and the University of North Dakota Energy and Environmental Research Center UNDEERC, a prototype bi-fuel hydrogen-gasoline vehicle system. The goal of this project is to test the technology in sub-zero climates and to determine if there is a potential market for these technologies.

Creating partnerships that last. AFVTech was chosen to offer its vehicle conversion know-how to Hydrogen project. Below is a picture of Kevin Fern President of AFVTech (right), Kirk Williams Senior Engineer University of North Dakota Energy and Environmental Research Center (UNDEERC) designated as the National Center for Hydrogen Technology (NCHT) (middle) and Dan Daly, Research manager UNDEERC NCHT (left) and technology to the