11 Facts About Converting Your Car To Natural Gas

As you may be aware, oil drilling and crude refining represents a multi-trillion dollar global industry. It should come as no surprise, given that just about every person on Earth relies on petroleum products. To make matters worse, fuel consumption has risen by 36% in less than 20 years, and the human population is expected to expand by 2 billion more people in just 3 decades.

Regardless of when a major collapse happens, rest assured that in the early phases, there will be stiff competition for gasoline and other fuels for transportation needs. At the same time, once our society collapses, the technology, knowledge, and equipment required for drilling and refining large quantities of crude may become unavailable.

In these situations, all of the hard work you did to prepare a gasoline based bug out vehicle and farm equipment will become useless. Learning how to convert your vehicles to run on natural gas can enable you to keep your bug out vehicle running long after gasoline becomes unavailable.

1. Why Is Natural Gas a Good Source of Fuel for Survival Vehicles?

{adinserter aliveafteramerika}Commercially available natural gas includes 70 – 90% methane. Since methane is made from the decomposition of organic matter in the absence of oxygen, it is actually very easy to make at the consumer level.

Even though you may only get 50 – 80% methane in a home based methane generator, it is still enough to power vehicles and just about anything else in your survival location.

Therefore, even if petroleum based products become unavailable, you will still be able to run farm equipment converted to natural gas and other essentials for making a living without relying on the current society.

2. How Natural Gas Works in Your Vehicles

Before gasoline can be burned in an automobile engine, it must be mixed with air and fed into the cylinder. This task can be accomplished by a carburetor or fuel injectors. When using natural gas as a fuel source, the natural gas takes the place of gasoline.

It takes 5.56 cubic feet of commercially available natural gas to produce as much energy as one gallon of gasoline. Since home brewed methane is not as compacted, you can expect to need 7 – 12 cubic feet of natural gas to get the same energy as one gallon of gasoline.

3. How to Measure Source Materials and Methane Production

Organic material contains varying amounts of carbon, hydrogen, and oxygen. As a result, when bacteria break down organic matter, different amounts of methane will be released.

For example, grass clippings will provide almost 80% methane per cubic foot of gas while meat scraps and other materials may only produce 50% methane. Therefore, if you are planning to build a methane generator, it will be to your advantage to find out exactly how much methane each material produces. From there, you will find it easier to figure out the ratios between source material and methane output.

4. International Views on Natural Gas for Vehicles

Internationally speaking, many other countries are well ahead of the United States in terms of promoting the use of natural gas for transportation as well as developing technologies.

For example, many countries are using natural gas to fuel trains, taxis, boats, and barges. Sadly, in the United States, oil developers continue to put their money into expensive and foreign sponsored commercial solar and wind power for the sake of “carbon credits”.

As we continue to avoid developing DIY solar and wind power at the consumer level (where it works the best and cheapest) and natural gas for transportation, here are what some other countries are doing:

- Germany uses a tax credit system to promote the use and development of natural gas for transportation. They recently elected to extend the tax credit until spring 2016.
- The European Union is in its final year of a special program to increase access to natural gas vehicles plus the infrastructure required for fueling them.
- There are over 16 million natural gas vehicles currently in service around the world.
- Well over 300,000 natural gas vehicles are in China, where this fuel is becoming the fuel of choice for transport over land and sea.

It should be noted that US and US based vehicle manufacturers are very likely to be left behind and driven out of business as other nations turn to natural gas instead of electric cars. While the auto industry continues to pander to oil hiding behind a complex system of “carbon credits”, they will truly lose out as the US economy collapses and the money they need

lies in the hands of people overseas that want natural gas cars and trucks.

Sadly, the more people in the US become intimidated by the requirements for converting a vehicle to natural gas, the more likely it is that our nation will continue heading down the wrong trail in terms of the fuels we choose for transportation and other purposes.

5. Best Cars to Convert to Natural Gas

There is a good bit of debate about which vehicles are best for converting to natural gas. Personally, I would recommend older pickup trucks and sedan and above sized cars.

When choosing a vehicle, bear in mind that a good bit of space will be taken up by a second gas tank suitable for holding natural gas. You will also need easy access to the tank in order to refill it or swap it out. As someone that has worked on compact sized cars, I can readily testify to the fact that you never have enough room in a smaller car for what is already there, let alone add something like a second gas tank.

By the same token, as you tinker with natural gas systems, you will find that larger vehicles (and engines) will have enough power and durability to take on any additional weight. This includes if you decide to create a vehicle that will also include modifications for making gasoline from wood (while very different from natural gas, in time of need this may still be something of interest to you).

When choosing a vehicle to convert, you will also need to think about EPA and NTSB regulations that make it illegal to "tamper" with vehicles for a certain number of years after they are manufactured. The age of the vehicle determines what kind of certification process the vehicle will have to undergo

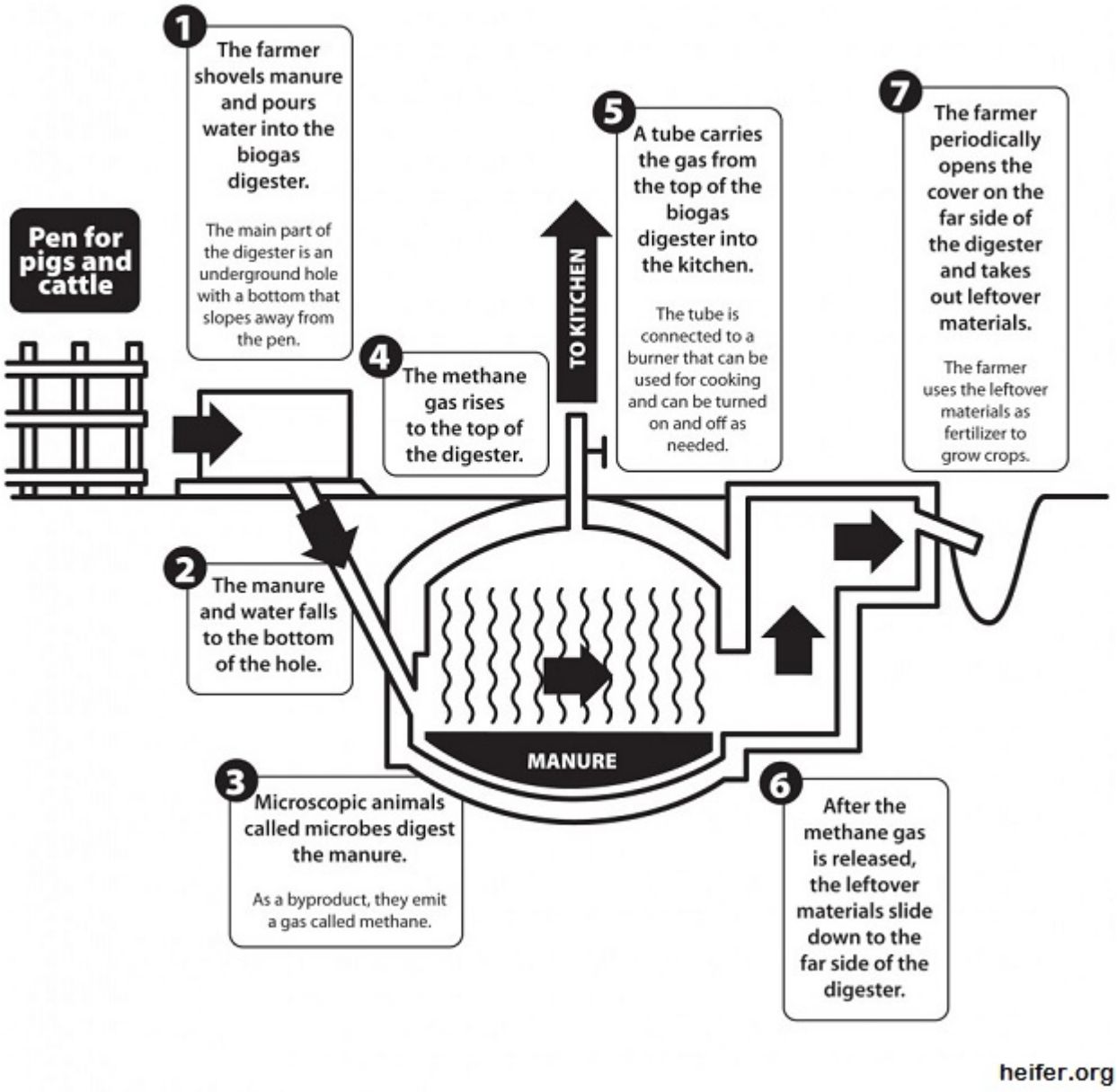
for the sake of proving worthiness for road travel.

Some people interested in converting vehicles note that computers in modern cars are geared towards optimizing fuel mixes featuring gasoline. Since natural gas, especially home brewed natural gas will have varying levels of methane, these computer systems can easily prevent the vehicle from running correctly. Since older vehicles have fewer computerized systems to worry about, you will have a better chance of creating a successful conversion for your bug out vehicle.

That being said, always bear in mind that any car with fuel injectors also has more computerized optimizers than one with a carburetor.

As newer vehicles arrive on the market, you are bound to be wondering if a hybrid vehicle would be worth converting. As you may be aware, hybrids are infamous for combining under-powered gasoline or flex fuel engines with batteries that wear out at around the 100,000 (or less) mile mark.

In a time of crisis, a hybrid vehicle will truly be more of a hindrance than a help. I would not waste time converting one of these vehicles to natural gas, nor would I purchase one that already runs on natural gas. Even though the vehicle may use less fuel, in the end the battery problem will put these vehicles out of commission much faster than conventional models.



6. How Your Vehicle Can Be Converted Right Now

If you have the budget and will to convert a vehicle to natural gas, it is best to start off by deciding which form you want to use, LNG (liquid natural gas), or CNG (compressed natural gas).

Typically, CNG is considered safer and more portable. It is also the form that most auto manufacturers are developing for large scale consumer applications. After you have read all the federal and state guidelines, it will be time to choose a vehicle and purchase a suitable conversion kit.

When choosing a conversion kit, pay careful attention to the storage tank and whether or not it can be easily exchanged for a different shape or design. Today, there are no universal standards for fuel adapters, which means your conversion kit may not even be able to accept fuel at commercial stations.

In addition, there are some exciting new technologies that promise to fit more natural gas into a tank at lower pressures. ANG or Adsorbed Natural Gas systems rely on fillers in the tank that make it possible to hold more natural gas at lower pressures.

The typical CNG tank for a car or truck must withstand 200 – 250 bars of pressure while an ANG tank can deliver the same amount of fuel at only 30 – 70 bars of pressure.

While ANG at this time is mainly geared for motorcycles, this technology can easily storm the market for cars and trucks. It would also be ideal for survival needs because lower pressure makes it easier to fill the system and also reduces the risk of accidents, injuries, and system breakdowns. Make sure that you can take advantage of changing technologies as well as ensure that you can use home brewed methane as opposed to just swapping tanks from a pre-manufactured system.

Once you have a conversion kit selected, you will need to consider how you will fuel the vehicle. There are home methane generation kits that can be used for this task, however you should never rely on them if you are planning for a large scale crisis. It will be to your advantage to build a methane generator and make sure that you know how to use it for fueling your vehicle as well as anything else that will run on methane.

Finally, don’t forget to collect your tax rebate (as small as it may be) for completing the conversion process. As small as this rebate may be, it is better than not getting any money back at all from a government that hampers progress in the

arena of using natural gas to fuel vehicles.

7. Advantages in a Non-Crisis Situation

No matter whether you live in a small town or a big city, you are sure to know where all the local dumps are. Surprisingly enough, these huge, ugly, stinky piles of garbage are an absolute gold mine in terms of methane production.

During and after a time of crisis, people can join together and tap these trash piles for methane. Just make sure that you take the time now to learn as much as possible about landfill management and methane tapping so that you know how to do it safely.

In the United States alone, there are well over 8,000 landfill fires per year that burn for months on end. Many of these fires are fueled by trapped methane that could easily be used for energy production.

Today, just about everyone in the United States, and many other nations receives water, electric, sewage, and trash bills. While some are increasingly chagrined by the storm water tax (aka “rain tax”) being added to their water and sewage bill, others find themselves wondering why rubbish removal rates keep climbing. What these very same people don’t realize is that local towns and municipalities are making an absolute fortune on all the trash they collect.

In fact, residents of NY, NJ, CT, and CA routinely see their rubbish removal bills going up even as collectors site “increasing EPA regulations” as the reason. Behind the scenes, power companies in these same states are tapping the trash piles for methane. In NY alone, methane gathered from these trash piles produces enough natural gas to power over 3,000 homes for an entire month.

On top of that, the methane from these trash piles is also used to power generators that put out enough electricity to

take the place of a small power station.

Each time you put table scraps and other trash into the dump, you are actually paying local companies backed by municipal governments for an asset that they double dip by turning around and selling to the local gas and electric companies. Never forget, the government approved and licensed trash collector that charge you $20.00 or more per month for rubbish removal. A good percentage of that cost includes the taxes and "regulatory permits" that the trash collector pays to the local government.

Next, the electric company and natural gas company charge you hundreds of dollars per month to use the energy generated from your own trash, plus all the fees and taxes that they also must pay to the government for permission to do business with you.

From that perspective, converting your vehicles and other appliances to natural gas (and then making your own fuel) is as much an ethical statement as it is one about surviving a crisis.

8. Disadvantages in a Non-Crisis Situation

Technically speaking, it is not especially difficult to convert a car to use natural gas. On the other hand, the gas companies in collusion with the government seek to deter people from doing their own conversions. Anyone violating the EPA guidelines can expect to pay several thousand dollars per day that their vehicle is determined to be "unlawfully modified".

Unfortunately, there are also relatively few mechanics that are licensed to make these changes. Therefore, it may cost thousands of dollars to convert a vehicle to run on natural gas.

Aside from government regulation, many people do not feel they

have enough time or resources to build methane generators. In addition, the fuel tanks used for storing natural gas in a vehicle can take upwards of 22 hours to fill a single tank.

While newer systems and technologies are emerging to enable faster refilling, the cost of these systems runs into the thousands of dollars.

9. Sources of Fuel

For people living in the United States, fueling options for natural gas vehicles are limited. If you live in an area with a natural gas fueling station, then you may be able to utilize it, provided you can get an exchange tank that fits your vehicle. Anyone that has suffered through USB cable standard conversions can readily relate to problems that can easily come up by simply choosing a tank that seems to be the most popular right now.

As may be expected, in a crisis, you can forget about obtaining fuel from this source.

Your second option for fueling a natural gas vehicle is to have a home based fueling system. Typically, these cost several thousand dollars. If you decide to have one at your bug out location, bear in mind that you will need sufficient electricity to power the device.

You will also need to know how to repair the system or make sure that someone in your group knows how to do the job. Given modern trends in electronic gadgets, you should also make sure the system will remain operational after an EMP attack.

The third option (making your own methane in a DIY home generator) is the one that makes natural gas one of the most appealing fuel sources for vehicles in a post crisis world. From table scraps to weeds and animal manure, just about anything organic can be used to make methane. You can build a reasonably functional methane generator and storage system for

well under $500.00.

Ultimately, even if you never convert your vehicle to run on natural gas, the methane can still be used to power cooking devices, laundry equipment, and kitchen appliances.

10. Storing Natural Gas

As you read this, you may find yourself thinking that you are likely one of those people that will opt to “bug in” instead of “bug out”. Historically speaking, it is truly impossible to know for sure which choice is the better one since the nature of the crisis and resource distribution afterwards are more important than where you actually are.

From that perspective you have only to think about whether or not you want to maintain a vehicle during and after a large scale crisis. No matter whether you feel drawn to a 3 wheeled motorcycle or a full sized van, being able to store fuel is bound to be very important.

Today, many people think that they can store up natural gas and look “normal” because so many families use natural gas for cooking.

Before you begin buying extra tanks, take a look at municipal codes to make sure there aren’t tank limitations for your area. As with gasoline, water, and just about everything else of interest to survivors, you can rest assured that there are regulations that will need to be considered in the short term.

Aside from legal matters, you also need to think carefully about the types of tank required to store natural gas. Typically, these tanks are expensive, and require periodic safety inspections.

If you, or others in your survival group cannot maintain this type of tank without relying on a commercial gas service, then you should not be considering converting a vehicle to methane

let alone for any other purpose. That being said, there is no harm in setting aside information and plans for making, using, and storing methane just in case you happen to meet someone that can contribute this type of experience and skill to the survival group.

11. Other Fuel Conversions that May Work Better

As an individual, I tend to favor hydrogen as a fuel over gasoline or methane. Over the last few years, hydrogen fuel generated from water has also been successfully paired with gasoline. Unfortunately, fully operational hydrogen vehicles are only available in the hybrid electric form.

Rather than take that route, there is a second option that combines methane with hydrogen. While this technology is in its infancy, at least it has the potential to deliver a fully functional engine that does not rely on batteries for power.

If you are serious about converting your vehicle to natural gas, this would also be a perfect time to see about making modifications that would allow for using hydrogen from water.

At the current time, politicians in the United States seem to be far more interested in talking about green energy and only pursuing projects that include stiff regulations, burdensome processes, and exorbitant prices for consumers.

Never doubt that a government accustomed to making money on crude and petroleum products will never want to see readily available fuels that cannot be taxed or controlled by them. Natural gas vehicles can serve as viable bug out vehicles, however you will need to do a lot of work to prepare them, the fuel, and fuel storage systems.

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