

**Between Stone Ages
(Mellow Version)**

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Between Stone Ages

The Past

Stone Age

When asked to imagine the “stone age”, one might imagine a “caveman”. For the purpose of this paper, that definition is not satisfactory. Instead, imagine a person, living off the land, relying simply on plants and animals in their immediate surroundings. Fire was most definitely used, and farming and animal domestication may have been used as well. Despite its simplicity, people led happy and meaningful lives. Now imagine dropping a modern-day person into this world. Even the most adaptable person would realize how small and slow the world becomes without all of the technology we’ve come to rely on. It would be difficult, to say the least. This world is what we would return to if we were to run out of fossil fuels.

Nonrenewable Resources

Nonrenewable resources are fossil fuels and metals. This term is pretty much self-explanatory, once they are gone, they are gone forever. While metals can be recycled, they need fossil fuels for that process. Because of this, a second stone age is only delayable, not preventable.

Defining “Fossil Fuel”

For the purpose of this paper, it’s important to discuss the term “fossil fuel”. The term “fossil fuel” is, in fact, a misnomer. It suggests that the “fuel” is made from fossils. This comes from the misuse and misunderstanding of the word fossil to mean anything that is ancient. A fossil, according to Britannica, is a remnant, impression, or trace of an animal or plant preserved in the Earth’s crust. While the fuel is made from long dead biological material from plants and animals, these are not truly fossils. A better, and more accurate term would be “nonrenewable fuels”. Despite the inaccuracy of this term, this paper will continue to use it.

Defining Metals

Metals are the second nonrenewable resource. The difference between 10,000 years ago and 500 years ago is the ability to use metals. Humans use, and have used, metals like iron, copper, and aluminum for various things from simple tools to computers

and rocket ships. Despite their wide array of uses, like “fossil fuels” they will one day be unusable due to a lack of a way to recycle them and a lack of raw materials.

Our Place in History

The first people like modern humans lived about 35,000 years ago (Jean Auel describes this period in her series, *Clan of the Cave Bear*). It wasn't for another 30,000 years that intellectual advancement began. Our present lifestyle, with trains, planes, and cars, has only existed for two hundred years. The nineteenth century produced many geniuses who advanced the general understanding of the physical world. Things like smart phones, GPS, and computers are less than fifty years old and yet, few could imagine life without them. 50 out of 35,000 is a tiny blip in the age of humankind and on the way to the second Stone Age.

The Present

Fossil Fuels as the Lifeline

Oil is the second most valuable resource, second only, to water. Needless to say, our present lifestyle could not exist without it. Not only is this organic matter used for energy, but it is also used to produce things like plastic, medication, contact lenses, and even cell phone components. Alternative energy sources, no matter how effective they are at creating energy, do not manufacture these invaluable byproducts.

Energy Content

Fossil fuels contain far more energy than any other energy source (Except nuclear, which is also nonrenewable). For example, a gasoline powered car and an electric car. A typical automobile holds one hundred and twenty pounds of fuel (Twenty gallons multiplied by six pounds per gallon). Furthermore, a typical car is able to get just under twenty-five miles per gallon, as of 2019. This means that a gas-powered car could drive five hundred miles on a full tank. In comparison, an electric car, on one charge, can only drive around two hundred and fifty miles. In addition, the battery in a Tesla sedan, arguably one of the most well-known electric cars, weighs twelve hundred pounds. This means that, if the electric cars battery weighed the same as the gasoline in a gasoline powered car, the electric car would only be able to drive twenty-five miles before running out of fuel. This is extremely inefficient and doesn't even bring up that fossil fuels are required to power the batteries themselves. Additionally, despite gasoline powered cars being much more efficient than electric cars, they are still only twenty to forty percent

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efficient. It is imperative that the most common form of transportation, the car, be made more efficient.

Coal

Coal is under attack in the United States, but it exists in abundance worldwide and some countries are using coal again. Two of the main arguments against the use of coal are what it does to the environment and the potential health problems burning coal can cause. However, coal can be converted to many forms and people should embrace it and learn to use it cleanly and efficiently.

Climate Change

Some people think that our goal should be to eliminate the use of fossil fuels. By suggesting this, they neglect another viable option. Perhaps instead we should be working on ways to conserve fossil fuels for as long as possible. That would give us more time before the inevitable stone age.

Fossil fuels are a miracle, and the even greater miracle is the sheer abundance of them. They exist because of an extremely specific evolutionary process that grew and encapsulated vegetation to form fossil fuels. It was incredibly unlikely for this process to happen and yet, it did.

Furthermore, people who suggest we eliminate fossil fuels rather than preserve them operate under the idea that climate change is largely caused by humans. That is not necessarily the case. We base our predictions on computer models, which is limited by human knowledge. Bias is weaved into the program, it's unavoidable. Therefore, they should be viewed with skepticism and not as absolute truth.

Other Energy Sources

There are many alternatives to fossil fuels, wind and solar for example, which are pushed due to the villainization of fossil fuels, but these are far from perfect. They are inconsistent and excess energy needs to be stored. At northern and southern latitudes, solar panels will often be covered by snow. These alternate energy sources cannot carry the load that fossil fuels presently carry.

Even still, once all the metals are gone, there will be no way to get this type of resource either. The result will be the same, another stone age.

The Future

Choices

From my view, there are two things that could be done. First, we could find a way to get hydrogen from seawater without using more energy in the process. Researchers at the University of Florida have designed a nanoscale material that can do just that. Seawater is an extremely abundant resource, and it is renewable.

Second, we could find a way to make fossil fuels more efficient. This solution would only be an extension of time and not a final solution.

Colonization of Mars (Or any other planet)

There are numerous movies that use this as a plot point, from movies like the Martian to Wall-E, but this is not a reasonable solution for our energy crisis. There are several reasons for this. One, the volume of raw material needed to support a large population of people would be outrageous. Transporting that much material would take a ridiculous amount of fossil fuels. Additionally, if the colonized planet didn't have fossil fuels, we would be no better off there than here after fossil fuels are gone.

The second big problem is the lack of oxygen. Providing oxygen to millions of colonists would be ridiculously difficult, if not impossible. Like it or not, earth is our home forever so we should do what we can to preserve it.

Positive Note

This may seem bleak, and, in a way, it is. Only the most innovative discoveries will be able to overcome the loss of fossil fuels and delay the inevitable stone age. That being said, science has not peaked, and new discoveries happen all of the time. Wonderful things are yet to come. A television personality recent said, "This is a wonderful time to be alive." She probably did not realize how prophetic that was.

Author's E"ditorials

Fossil fuels, you evil thing, be gone

Some of our politicians assert that unless we stop using fossil fuels that our civilization cannot survive another 20 years. Ridiculous! It is not that easy to kill us off. The volume of the earth atmosphere is enormous. Oceans cover 75 percent of the earth surface, so pollution is not being generated there. (Planes and ships in the ocean space are too small to impact.) Nature has other ways to kill us off. Think volcanoes, meteors, virus.

Get rid of fossil fuels

Do these people really mean that? Ask them to visualize themselves 10000 years ago in a world with no fossil fuels. What would life be like today? There is no need to speculate, just look back 500 years. The advancement over those 500 years until now would be nil. How many of our present population would be happy to regress 500 years?

Remember the *Beverly Hillbillies*, "up from the ground came a bubbling crude". Even 500 years ago people had limited use of fossil fuel.

Conservation and innovation

Use nature's greatest gift to mankind wisely. Convert mass to energy more efficiently. Supplement fossil fuel with alternative energy sources; nuclear, wind, solar and others yet to be discovered.

When, who knows

When it happens depends on how well the future is managed.

A recent statement from a television program stated: "We have enough oil to last 500 years". Maybe? But, that is a blip in the long human timeline.

There is a television program series, *How it is Done* by Mike Rowe. The episodes on *Oil* and *Metal* are remarkably interesting. Especially his quote "After water, oil is our second most valuable resource".