

Two essays about the most likely origins of oil

Oil is NOT a Fossil Fuel

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We all grew up believing that oil is a fossil fuel, and just about every day this 'fact' is mentioned in newspapers and on TV. However, let us not forget what Lenin said – "A lie told often enough becomes truth."

Soon after the end of World War II, the Soviet dictator, Stalin, realised that the then Soviet Union needed its own substantial oil reserves and production system if it was ever again called upon to defend itself against an attacker such as Hitler's Germany. In 1947, the Soviet Union had, as its petroleum 'experts' then estimated, very limited petroleum reserves. Stalin's response was to set up a task force of top scientists and engineers in a project similar to the Manhattan Project – the top-secret US program to develop the atom bomb during WWII – and initially under the same secrecy, and charged them with the task of finding out what oil was, where it came from and how to find, recover and efficiently refine it.

In 1951, the modern Russian-Ukrainian theory of deep, abiotic petroleum origins was first enunciated by Nikolai A. Kudryavtsev at the All-Union petroleum geology congress. Kudryavtsev analysed the hypothesis of a biological origin of petroleum, and pointed out the failures of the claims commonly put forward to support that hypothesis.

Stalin's team of scientists and engineers found that oil is not a 'fossil fuel' but is a natural product of planet earth – the high-temperature, high-pressure continuous reaction between calcium carbonate and iron oxide – two of the most abundant compounds making up the earth's crust. A team consisting of Russian scientists and Dr J. F. Kenney, of Gas Resources Corporation, Houston, USA, have actually built a reactor vessel and proven that oil is produced from calcium carbonate and iron oxide, as detailed on the Gas Resources website www.gasresources.net/AlkaneGenesis.htm

A continuous reaction occurs naturally at a depth of approximately 100 km at a pressure of approximately 50,000 atmospheres (5 GPa) and a temperature of approximately 1500°C, and will continue more or less until the 'death' of planet earth in millions of years' time. The high pressure causes oil to continuously seep up along fissures in the earth's crust into subterranean caverns, which we call oil fields. Oil is still being produced in great abundance, and is a sustainable resource – by the same definition that makes geothermal energy a sustainable resource. All we have to do is develop better geotechnical science to predict where it is and learn how to drill down deep enough to get to it. So far, the Russians have drilled to more than 13 km and found oil. In contrast, the deepest any Western oil company has drilled is around 4.5 km. This explains why Russia is today one of the world's major oil and gas producers and exporters.

The current US energy strategy, driven by the erroneous beliefs that oil is a fossil fuel and that its supply will soon be exhausted, is illogical. Given the fact that oil is produced naturally at rates far in excess of what mankind could ever conceivably consume, it makes absolutely no sense for any nation to buy it from foreign sources if it is cheaper to drill for and pump its own – and that is precisely what the US should be doing immediately.

If the US switched from being a net consumer in the world oil market to becoming a net supplier, the price of oil would plunge, perhaps to around \$US30 per barrel, with the result that the world's economies would boom as never before.

Most importantly, people would have confidence to invest in their futures, safe in the knowledge that oil would never run out. A bonus would be that the US military-industrial-political complex would no longer feel the need to use military force to control the Middle East's oil supplies, and neither would any other world power. A further bonus would be that all subsidies to producers of alternative fuels and energy supplies could be removed, with the result that such production would occur only if it was economically viable, which would mean that most such producers would either cease, or greatly scale down, their businesses. All development of wind farms would cease forthwith as they are so uneconomic and so unreliable, apart from being unsightly blots on so many landscapes.

The Role of Carbon Dioxide in the Origin of Hydrocarbons

By Robert Chouinard

For 250 years, the prevailing working hypothesis of the origin of oil (aka petroleum and hydrocarbons) is the "dead dinosaur hypothesis" and dates back to the 18th century. Its originator was a Russian scientist named Mikhail Lomonosov, who put it this way in a 1757 paper: "Rock oil (petroleum) originates as tiny bodies of animals buried in the sediments which, under the influence of increased temperature and pressure acting during an unimaginably long period of time, transforms into rock oil."

However, a more scientific hypothesis originated in the 1950s when Russian and Ukrainian scientists developed a new theory about petroleum's origins called the abiotic or abiogenic theory. According to this view, oil is fundamentally inorganic and has no relationship to dead plant or animal life. Rather, oil originates deep in the Earth's crust from inorganic material - marine carbonate deposits (limestone).

<http://www.studien-von-zeitfragen.de/Zeitfragen/Petroleum/petroleum.html>

In the laboratory, "...pure solid marble (CaCO_3 - aka metamorphic marine carbonate or limestone) and iron oxide (FeO) wet with triple-distilled water are subjected to pressures up to 50 kbar (50,000 times atmospheric pressure) and temperatures to 2000 C. With no contribution of either hydrocarbons or biological detritus, the CaCO_3 -FeO- H_2O system spontaneously generates, at the high pressures predicted theoretically, the suite of hydrocarbons characteristic of natural petroleum." Hydrocarbons are compounds containing only hydrogen (H) and carbon (C) atoms. Hence, neither the calcium (Ca) nor oxygen (O_2) part of the CaCO_3 is transformed, only the carbon (C), and the iron oxide (FeO) acts only as a catalyst, under pressure, to break down the H_2O into elemental hydrogen (H) and oxygen (O) to make hydrogen (H) available to combine with the carbon (C).

<http://www.gasresources.net/Introduction.htm>

In the real world, tectonic processes such as one tectonic plate sliding over another, if it occurs in the ocean, can cause enormous amounts of limestone deposits (CaCO_3 , the precursor to marble used in the above experiment) to subduct (be buried) under the top plate and thus be subjected to intense pressure and temperature. The other ingredients such as iron would be present in the earth's mantle overlaying the wet limestone but the H_2O may also be present as elemental hydrogen and oxygen along with the iron. Thus, all the ingredients and conditions of the above laboratory experiment would very likely be present within the earth's mantle to form the suite of hydrocarbon compounds we call oil.

Just as the food chain on land and in the sea depend on atmospheric CO_2 , so does the formation of hydrocarbons. The first step starts with atmospheric CO_2 that is absorbed by the ocean and combined with calcium to form dissolved calcium carbonate (CaCO_3). CaCO_3 can become concentrated in seawater and, as it reaches a critical point, it begins to precipitate out in tiny grains the size of sand. The dissolved CaCO_3 can also be used by marine organisms for shells which also deposit to the bottom when the organism dies. As described above, this CaCO_3 becomes the source of carbon which combines with elemental hydrogen to form hydrocarbons. The enormous energy required for this miraculous transformation is provided by the immense heat and pressure within the Earth's mantle. This energy is converted and stored as chemical energy in the molecular structure of the hydrocarbons and it is this energy that is released to satisfy our energy needs. Thus, this process starts with CO_2 and water and should end with CO_2 and water when the hydrocarbons are burned. Unfortunately, lots of other compounds, including more than 250 toxins, are created when we burn the hydrocarbons.

During combustion, CO_2 is released to begin this endless cycle once more. Of course, that makes oil renewable and we are not supposed to know that and so there is great opposition to this theory from the peak oil crowd. But why does burning oil create so many toxins instead of reverting back to pure CO_2 ?

To answer this question it is necessary to understand something about carbon chemistry.

Carbon, an exceptional element, has the unique property of forming highly complex compounds, many of which are found in living things. Carbon easily combines with itself to build up molecules with an apparently endless variety of chain and ring structures. Carbon readily combines also with hydrogen and oxygen and to a lesser extent with only a few other elements like nitrogen, phosphorus and sulfur, yet it forms more than half the compounds known to science. The current literature on the chemistry of carbon contains data on millions of carbon compounds with many of them being toxic.

For example, when flaring (burning off the gas that comes from oil wells) a great many new carbon compounds are spontaneously created during combustion and more than 250 of these compounds are known to be toxic. The reason for all the toxins is that when burning the hydrocarbons, which consist only of hydrogen and carbon atoms, it now combines with oxygen and other elements like nitrogen, phosphorous and sulfur to form countless new compounds. One of the most toxic is carbon monoxide (CO) which we are all familiar with.

The purpose of installing catalytic converters on automobiles is to convert toxins in the exhaust, which include carbon monoxide and other unburnt carbon compounds, into the harmless carbon dioxide from which oil originated (plus other harmless gases that were present in the air that took part in the combustion). The most hopeful and benign result of burning any hydrocarbon is to end up with pure water (H₂O) and carbon dioxide (CO₂), nitrogen (N), and oxygen (O₂)—all harmless gasses.

The reality is that enormous amounts of toxic compounds, however, escape into the atmosphere and end up in the ocean where they are broken down by small, simple, and diversified prokaryote bacteria that form the base of the ocean food chain. The breakdown of organic compounds into inorganic materials is called "mineralization". Until these toxic chemicals are broken down, unfortunately, they can cause damage to local ecosystems but their overall effect on the ocean is to add nutrients, not to endlessly accumulate as pollutants. Mineralization of toxins occurs on land as well.

Carbon forms the backbone of biology for all life on Earth and yet we are being fed one lie after another about its most important form - CO₂: first, we are lied to about it causing a global warming catastrophe; second, we are lied to about the enormous harm to corral reefs due to it causing ocean acidification; third, we are lied to about it being a pollutant; and, finally, we are lied to, by omission, about its connection to the origin of oil. (Lying by omission is a serious crime for individuals but the Supreme Court has ruled that it is not a crime for Corporate America. No wonder that Al Gore always speaks as Chairman of his Generation Investment Management.)

The abiotic theory of renewable oil is heresy to the peak oil religion just as so much good science is heresy to global warming/climate change. In fact, peak oil is often spoken of in the context of climate change, the conflagration of two hypothetically "huge" problems.
