




Just Stop Oil!? Not even a pencil can be produced without oil

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There is not a single person on earth who knows

to do something as simple as a pencil.

(trans. Pers.)

Leonard E. Read

At first reading, the strange statement in the motto of the article seems a little exaggerated. Because, after all, it's not a plane, a car or a spaceship, it's a pencil. That is, a piece of painted wood, with a thin graphite mine and an eraser at one end (Fig. 1). The number of pencils made annually worldwide exceeds [14 billion](#). That the statement in the motto corresponds to the truth has been brilliantly demonstrated in the essay *I, Pencil* (*Me, the Pencil*) published in 1958 and resumed in 1964 under the title *Only God Can Make a Tree – or a Pencil*. The author, Leonard E. Read, founded the Foundation for Economic Education – first *think tank* modern libertarian from the United States – and was one of the main responsible for the rebirth of the liberal tradition in America after World War II.



Fig. 1. Me, the Pencil.

I, Pencil it is a subjective genealogy, told by the main hero, a pencil. Using many examples to demonstrate the existence of a vast and complicated production structure, controlled by the division of labor in free markets, *I, Pencil* explains the fact that no one knows how to make a pencil because of the myriads of production processes involved:

MY FAMILY TREE BEGINS WITH WHAT IS ACTUALLY A TREE, A CEDAR ... THAT GROWS IN NORTHERN CALIFORNIA AND OREGON. NOW, IMAGINE ALL THE SAWS, TRUCKS, ROPES AND COUNTLESS OTHER MACHINES USED TO CUT AND TRANSPORT CEDAR LOGS TO THE RAILWAY. THINK OF ALL THE PEOPLE AND THE COUNTLESS PROFESSIONAL SKILLS THAT HAVE CONTRIBUTED TO THEIR MANUFACTURE: MINING, STEELMAKING AND ITS TRANSFORMATION INTO SAWS, AXES, ENGINES; CULTIVATION OF HEMP AND ITS PASSAGE THROUGH ALL STAGES TO THE STAGE OF HEAVY AND DURABLE ROPES; LOGGING CAMPS WITH THEIR BEDROOMS AND CANTEENS, WITH THE PRODUCTION AND COOKING OF ALL FOOD. ALAS, NO ONE KNOWS HOW MANY THOUSANDS OF PEOPLE CONTRIBUTED TO EVERY CUP OF COFFEE DRUNK BY FOREST WORKERS!

The pencil then details the rest of the work required for its production: manufacture of platform wagons, rails and railway locomotives to ensure the sending of logs to the sawmills; development of transport systems – ships, trains, trucks; providing heat, light and energy; construction of a pencil factory; manufacture of mining equipment; graphite extraction; sending materials in one place. The materials needed to paint the pencils and the process of painting, labeling and adding the brass end are described below; extraction of zinc and copper for the manufacture of brass; manufacture of eraser. And the examples do not stop here:

Even my mine has a complex composition. Graphite is extracted from Ceylon. Think of these miners, those who make them a lot of equipment, those who produce the paper bags in which the graphite is transported, to those who weave the rope with which the sacks are bound and to those who load them into ships, and to those who build ships. Even the lighthouse guards on the route have a contribution to my birth, as do the tug pilots.

While the division of labor needed to make a pencil is impressive – a complex global collaboration to bring together all the component parts, the family tree of other objects, more complicated (eg, a computer or a

phone „ smart ”), obviously comprising many more branches. However, a common resource is needed for all family trees: energy.

Even a simple pencil needs electricity and heat produced by millions of barrels of oil, billions of cubic meters of gas and thousands of tons of coal. All components of the pencil's family tree are more or less dependent on fossil fuels. A detailed analysis of these intrinsic links has recently been published [here](#). A short fragment is edifying:

IN THE CEDAR FORESTS OF OREGON, A LOT OF WOODCUTTERS WAKE UP IN THEIR OWN HOMES VERY EARLY IN THE MORNING; HUNDREDS OF PEOPLE WHO TURN ON THE LIGHTS, BOIL WATER FOR COFFEE, I GO TO WORK WITH DIESEL TRUCKS. THE TOOLS THEY CARRY ARE MADE OF STEEL AND IRON ORE, THEY ARE FIXED WITH METAL SCREWS, PLASTIC HOUSINGS, ADHESIVES AND RUBBER. GASOLINE AND LUBRICANTS ARE NEEDED TO POWER AND GREASE THE CHAINSAWS, WHILE THE NYLON AND POLYPROPYLENE ROPES HELP THE CUTTERS TO CLIMB AND RAPPELLING THE IMPOSING TREES.

OIL AND NATURAL GAS HAVE MADE ALL THESE THINGS POSSIBLE, FROM THE HEAVY MACHINERY NEEDED TO EXTRACT THE MATERIALS TO BE USED IN SYNTHETIC FIBERS AND, OF COURSE, TO COMBUSTION ENGINES THAT POWER OPERATIONS. YOU CAN ALREADY SEE WHY AN INCREASE IN OIL PRICES COULD START PUTTING PRESSURE ON PENCILS AS WELL.

The plea for the appreciation of moral, not just material, values of oil and gas is sublime presented by the Czech-Canadian professor Vaclav Smil in his book [How the World Really Works](#) (2022).

In the chapter „ The four pillars of modern civilization ”, Professor Smil argues and demonstrates that the modern world has emerged due to and cannot exist without four essential materials: steel, cement, plastics and ammonia. The latter is in fact the most important because at the beginning of the 20th century, German chemists Fritz Haber and Carl Bosch discovered the secret of the industrial production of synthetic ammonia, through which *they turned the air into bread*. Today, half of the food of the 8 billion inhabitants of the planet is due to synthetic fertilizers produced using the Haber-Bosch process.

The key element common to the four essential pillars of the modern world is important to discuss, especially in the context of a fossil carbon-free future (*Just Stop Oil!*): the industrial production of the four materials depends to a large extent on the burning of fossil fuels and some of these fuels are the raw material for the synthesis of ammonia and plastics. A common example is plastic: I write these lines on an HP laptop, with letters and the wireless mouse made of acrylonitrile butadiene styrene (ABS), I sit on a rotating chair with polyester backrest, with nylon wheels that rotate on a protective polycarbonate mat placed over a polyester rug... *Just Stop Oil?!*

Let's look at a bigger picture: Life without oil will not be as simple as some think

What the activists say from *Just Stop Oil!* I quote:

IT HAS TO STOP. IF WE CONTINUE ON THE CURRENT PATH, WE WILL DESTROY FAMILIES AND COMMUNITIES. WE WILL FACE THE STARVATION AND SLAUGHTER OF BILLIONS OF POOR PEOPLE – AND THE TOTAL BETRAYAL OF OUR CHILDREN AND THEIR FUTURE. . . IN EIGHT YEARS WE MUST PUT AN END TO OUR DEPENDENCE ON FOSSIL FUELS. . . CLIMATE COLLAPSE WILL MEAN THE END OF WORKERS' RIGHTS, WOMEN'S RIGHTS, ALL HUMAN RIGHTS. IT IS ALREADY THE GREATEST INJUSTICE IN HUMAN HISTORY AGAINST THE GLOBAL SOUTH. IF YOU DO NOT RESIST, YOU ARE IN FAVOR OF EVIL.

Is that so?...

In 2018, I argued that [oil is Achilles' heel for modern agriculture](#), the one meant to feed 8 – 10 billion people, and that a future based on *Just Stop Oil* it will be a huge problem to provide daily food. At the level of 2016, less than half of the extracted oil was transformed into gasoline, the most used car fuel (Fig. 2). Suppose that all world transport will use renewable energy sources by 2050 or even sooner. But this environmental movement – *Just Stop Oil* – does not explain how materials that currently use more than 50% of extracted and refined oil (Fig. 2).

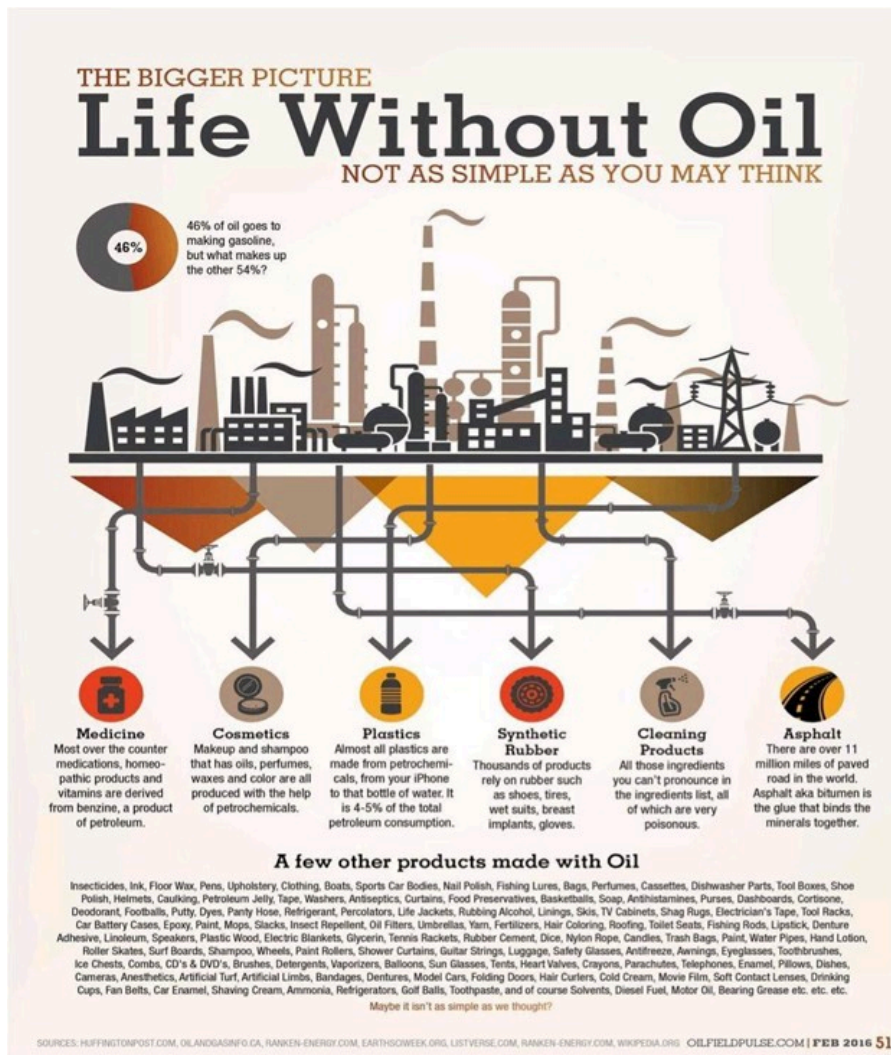
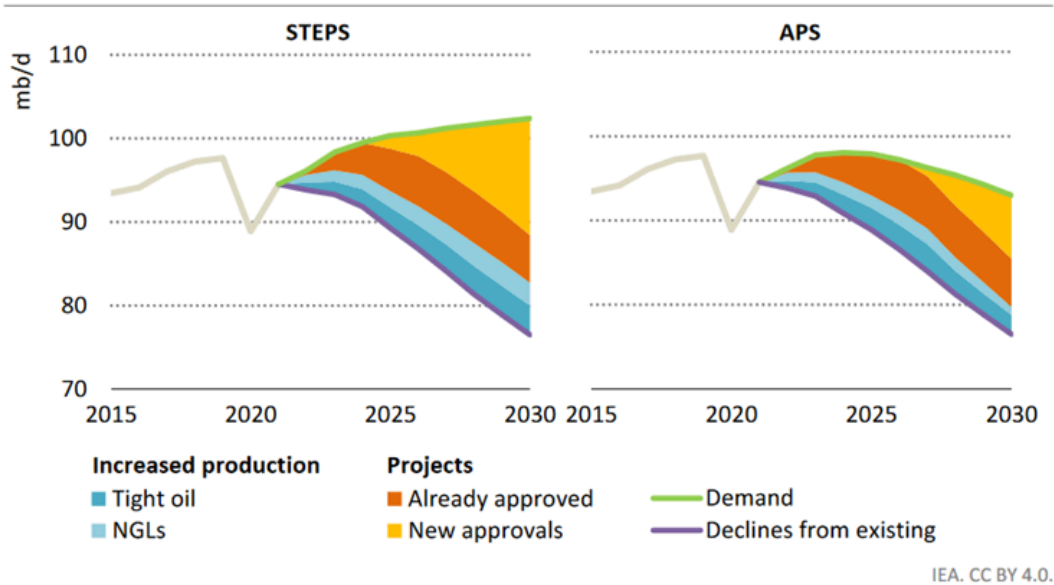


Fig. 2. **Just Stop Oil!** How will we produce medicines, cosmetics, plastics, synthetic rubber, cleaning products, asphalt, insecticides, lubricants, etc. ?

Suppose again that the request of the activists will be met. What will happen? A reply has already been made in 2022 by *International Agency for Energy* (IAE) (Fig. 3):

Figure 7.16 ▶ Contribution of increased production of tight oil and NGLs, and new and approved projects in the STEPS and APS



Although tight oil is set to grow strongly, declining output from existing sources of production means new conventional projects are essential in both the STEPS and APS

Fig. 3. Estimates of the demand for oil extracted by hydraulic fracturing and liquid natural gas by 2030.

According to the current policy scenario (called STEPS) and those announced by governments (called APS), the world will need new sources of oil supply to meet demand in this decade, no less oil.

What will be the situation of natural gas? The IEA offers the following graph (Fig. 4), according to which, by 2050, natural gas will dominate the three investment scenarios.

Figure 8.9 ▶ Average annual natural gas and hydrogen investment by scenario

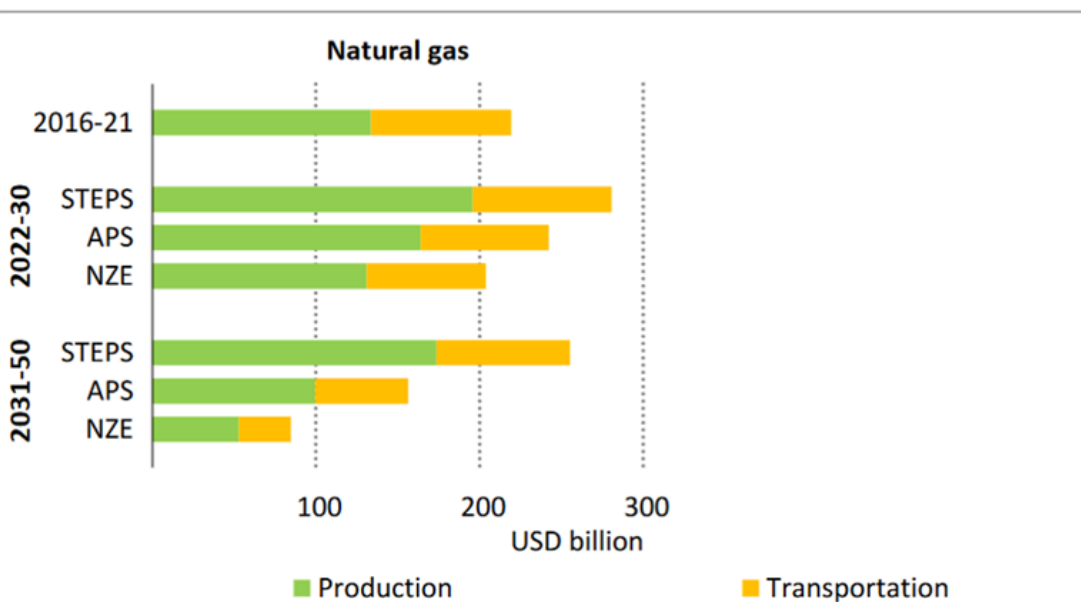


Fig. 4. Investments in billions of US dollars for natural gas extraction in three different scenarios: STEPS, APS and NZE (Net Zero Emissions). Investments in hydrogen are not presented.

To the despair of activists *Just Stop Oil* and others like them, I must say that in all the scientific literature I have consulted there is no scenario to suggest that it is possible *stopping* use of fossil fuels over the next 7 years. And reaching a net zero level by 2050 is almost certain [utopian](#).

Just Stop Oil it's just another *mission impossible*.

conclusions

The essay from which I started – *I, Pencil* – was brilliantly featured in less than 3 minutes by Milton Friedman on a popular PBS public television show in 1980. Nobel Laureate in Economics (1976), Friedman demonstrated to viewers the meanings and importance of the subjective genealogy told by the Pencil:

THE BASIC PRINCIPLES UNDERLYING THE FREE MARKET, AS ADAM SMITH TAUGHT TO HIS STUDENTS ... ARE VERY SIMPLE. LOOK AT THIS PENCIL. THERE IS NOT A SINGLE PERSON IN THE WORLD WHO COULD MAKE THIS PENCIL. A REMARKABLE STATEMENT? NOT AT ALL. THE WOOD FROM WHICH IT IS MADE, AS FAR AS I KNOW, COMES FROM A TREE THAT WAS CUT IN WASHINGTON STATE. IT TOOK A SAW TO CUT THAT TREE. STEEL WAS NEEDED TO MAKE THE SAW. IRON ORE WAS NEEDED TO MAKE STEEL...

LITERALLY, THOUSANDS OF PEOPLE COOPERATED TO MAKE THIS PENCIL, PEOPLE WHO DO NOT SPEAK THE SAME LANGUAGE, WHO PRACTICE DIFFERENT RELIGIONS, WHO MIGHT HATE EACH OTHER IF THEY EVER MET. WHEN YOU GO TO THE STORE AND BUY THIS PENCIL, YOU ACTUALLY TRADE A FEW MINUTES OF YOUR TIME FOR A FEW SECONDS DURING THESE THOUSANDS OF PEOPLE. WHAT BROUGHT THEM TOGETHER AND LED THEM TO COOPERATE TO MAKE THIS PENCIL? THERE WAS NO COMMISSIONER TO SEND WARHEADS FROM A CENTRAL OFFICE. IT WAS THE MAGIC OF THE PRICING SYSTEM, THE IMPERSONAL OPERATION OF THE PRICES THAT BROUGHT THEM TOGETHER, AND MADE THEM COOPERATE TO MAKE THIS PENCIL, SO YOU CAN HAVE IT FOR A SMALL AMOUNT.

THAT IS WHY THE FUNCTIONING OF THE FREE MARKET IS SO ESSENTIAL, NOT ONLY TO PROMOTE PRODUCTIVE EFFICIENCY, BUT EVEN MORE SO TO PROMOTE HARMONY AND PEACE BETWEEN THE PEOPLES OF THE WORLD.

Ideas are stronger when presented in a convincing story. The pencil, delighted by Leonard Read, manages to convince (me, at least) that savings can hardly be „ planned ” when no person possesses all the knowledge and skills needed to produce a simple pencil. And the lesson that Penion teaches us is one about the great mysteries and beauties of the modern world (*apud* Benjamin R. Dierker): The fact that so many people and nations, acting only in their own interest, can work on a single creation, even if none of them could produce a simple pencil. In a way, the energy needed to produce that pencil follows the same pattern. I very much doubt that a single man could produce a megawatt of electricity or a gallon of gasoline from scratch.

P.S. I read a story [comment](#) in which I am accused of a *huge cynicism*:

„About causes ” speaks in the space of this platform, often objectively, Professor C Crănganu, only with immense cynicism, He concludes that life has disappeared from Earth throughout history several times, so if it happens again due to human causes, it is not big cheese.

To the commentator's disappointment, I must say that I am not cynical, but realistic. From a paleontological point of view, at a first approximation, there is not much life on Earth: 99% of the species that have ever evolved have disappeared. And not because of people or anthropogenic greenhouse gases. Each species has a certain period of evolution on this planet, after which it becomes a fossil species. Mammals are no exception. The average lifespan of a mammalian species is approximately [2.5 million years](#) before disappearance. The cause of periodic extinctions is related to the climate cycles discovered by the construction engineer and geophysicist Milutin Milanković.

[The oldest known attestation of the genre *Homo*](#) – human genus – represented by a lower jaw with teeth, discovered in the Afar region of Ethiopia, now dates back 2.8 – 2.75 million years.

In other words, *Our time is up!*