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TOPICS ECONOMY SUSTAINABLE CONSUMPTION

WHEN WILL WE RUN OUT OF FOSSIL FUELS?

Sustainable Consumption
#fossil fuels #energy
#environment #climate
change #solar power
United Kingdom China
Russia USA India
Nigeria Venezuela
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中文

Fossil fuels are at the core of global energy systems, powering everything from

transportation vessels to entire industries. Over the past 200 years, the worldwide consumption of fossil fuels has grown over 1,300-fold. But these fuels, which put the environment at risk, are a depleting source.

As the world's population grows and reliance on gas, oil and coal increases, a pressing question arises: when will fossil fuels run run out?

The answer is complex, and requires us to examine the current state of reserves and the changing demands for fuel.

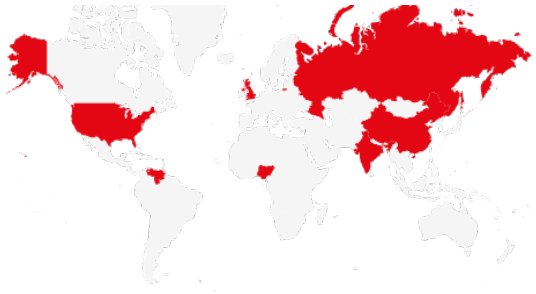
WHAT ARE FOSSIL FUELS?

Fossil fuels are bio-materials comprising hydrocarbon. Through lithification and degradation processes over millions of years, the organic matter turns into coal, natural gas and oil. These can be used as an energy source, and can be extracted by drilling into the earth's crust

The oil reserves in the North Sea, for instance, are about 150 million years old, and coal in the UK began forming around 300 million years ago.

Fossil fuels differ in energy density and their pollution capacity.

Coal was the exclusive fossil source until 1860 when consumption of crude oil began. Coal consumption stood at about 97 TWh (terawatt-hours) in the early 1800s, and



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Fossil fuels are available in limited supply and are not renewable. They are therefore not considered sustainable energy sources, and their use comes with a variety of downsides.

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The longevity of a substance depends on both its usage rate, which modifies depending on the efficiency of the consumption equipment, and its reserves, a category that includes transformation and loss. The total sum includes resources from proved reserves, probable reserves and possible reserves.

COAL

Coal, the first fossil fuel ever used, is easy to mine and utilise. Consider the energy you can obtain from charcoal to get a sense of coal's energy density. But coal aerosolises and generates water contaminants, as well as pollutants that lead to breathing hazards, when extracted.

The World Coal Association estimates that there are roughly 1.1 trillion tonnes of coal around the world, with the largest reserved found in the US, Russia, China, Australia and India.

The most polluting fossil fuel, coal is in particularly high demand in the construction industry, which accounts fo r80 percent of the global rise in its demand.

According to recent estimates, we have enough coal to last us for about 132 years. But this deadline could change depending on whether increased drillings - which will have a devastating impact on the environment - will result in the discovery of new reserves, or if changes in demand occur.

The ongoing war in Ukraine, for instance, has led to a spike in Europe's reliance on coal, a trend that has no evident end in sight.

OIL

Underground oil reserves require drilling, pumping and processing. As of 2022, proven oil reserve total at around 1,757 billion barrels, up 1,735 billion barrels the previous year. Venezuela holds the highest concentration of the world's oil reserves at 18 percent, followed by Saudi Arabia (16 percent) and Canada (10 percent).

Global consumption of oil is currently estimated at roughly 96.5 million barrels per day. According to OPEC, global demand is expected to reach 109 million barrels per day.

Estimations vary slightly, but it is predicted that - if demand forecasts hold - we will run out of oil from known reserves in about 47 years.

While technically we could keep drilling for oil indefinitely, locating reserves will become harder and harder the deeper we dig into the ground - and the pricier, more complex and less efficient this enterprise will become.

NATURAL GAS

Natural gas is considered to be among the least polluting fossil fuels, compared to oil and coal. The majority of its reserves derive from ancient decomposed organic matter - primarily marine organisms, although not all sources are millions of years old. Landfills and livestock produce methane, for instance, which is a natural gas.

Like other fossil fuels, natural gas is a depleting source, and as of 2020, about 7,257 trillion cubic feet of proved natural gas reserves were available around the world. How long will this last us?

Predictions vary and largely depend on consumption rates, but experts estimate that it will be between 90 and 120 years before we run out of natural gas.

According to Statistics, despite a slight decline in natural gas production in 2022 (4.09 trillion cubic meters), the share of this fossil fuel in global energy sources is expected to rise.

Russia, the US and Iran are among the top producers of natural gas as of 2023.

TRANSCENDING FOSSIL FUELS

Fossil fuels are available in limited supply and are not renewable; they are therefore not considered sustainable energy sources, and their use comes with a variety of downsides. Chief among them are increased carbon emissions, air and ocean pollution and habitat destruction.

Enterprises and governments have enjoyed short-term gains from fossil fuel investments, but they are gradually shifting the focus towards renewable energy resources - such as solar and wind power - that help prevent climate change by offsetting and lowering carbon emissions.

Solar power technology, for instance, has a two-year energy payback period. This means that a solar park will produce the amount of energy spent on its construction within two years. Following this period, the park can produce decades-worth of clean energy.

HOW CAN INDIVIDUALS AND GOVERNMENTS ADDRESS FOSSIL FUEL DEPLETION?

It is important to explore strategies and solutions for a future less dependent on fossil fuels. To do this, we need to ramp up investment in alternative energy sources, such as solar, wind and geothermal power. We must also think about ways to reduce emissions from cars, as well as promote public transport and electric car use.

Additionally, it is critical to develop policies that encourage responsible energy consumption worldwide.

WRAPPING IT UP

When will fossil fuels run out? If the world quickly comes to terms the planet's changing energy requirements and implements advanced tech solutions and necessary adjustment to consumption habits, fossil fuels will, hopefully, never run out.

Limiting the use of fossil fuels is the only hope to avert the complete depletion of our ecosystem and its dangerous consequences.

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