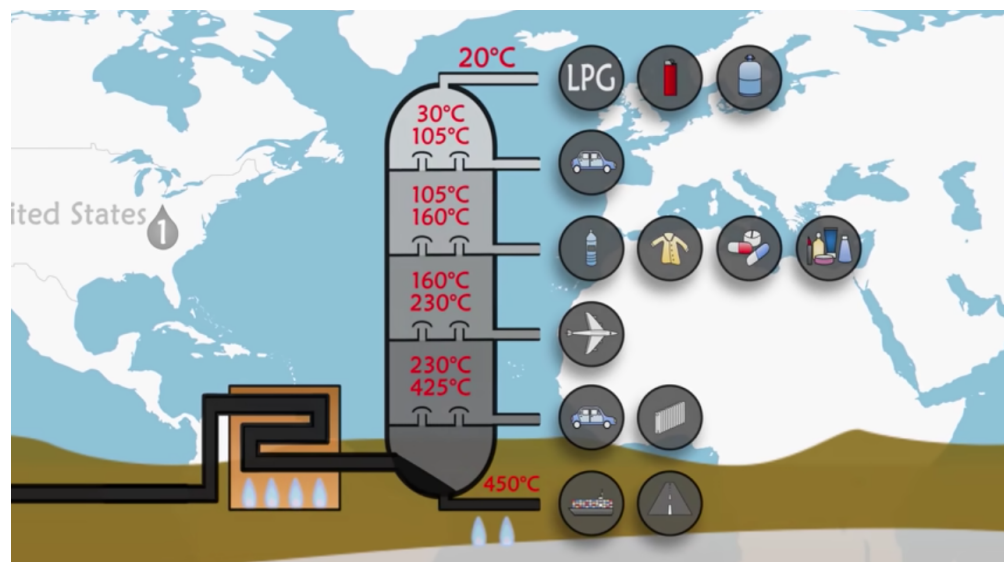


Fossil Fuels

Fossils are still used everyday to power our societies



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Still from the video "Petroleum – Modern history of oil on a Map" (Source: Geo History/YouTube)

Fossils are not confined to the halls of museums and paleontological digs. Fossils are all around us and usually much closer than we think. In fact, reading this text on your device, you are probably using fossils right now, since most plastics we produce are derived from fossil fuels. The long hydrocarbon chains that compose petroleum, refined oil, and their derivatives were once living organisms. Under immense geological pressures and through physicochemical transformations taking place over millennia, the remains of these mostly microscopic organisms turned into the constituents of the most pervasive, valued, and abused fossils in the world: fossil fuels.¹ While their current uses rarely bear any immediately recognisable trace of their past lives, oil exploration and extraction are clearly linked to geological and paleontological sciences, and remind us of the deep histories that make up the stuff of our daily lives, power our cities and transports, and fuel conflicts and economies across the world.²

While petroleum (literally *rock oil* in Latin) was already known and used in antiquity as combustible, as tar for boats and construction, and as a material to fabricate medicines, it was only over the course of the 19th century that its use grew exponentially and its exploitation began in earnest. This success was especially combined with the shift from steam power to engines using various derivatives of petroleum as fuel, which marked the end of the 19th and the beginning of the 20th century. This period also saw a worldwide intensification in extractive industries which was enforced by colonial rule and the violent

expansion of European empires, which in turn opened growing global markets with their thirst for oil. New technoscientific understandings of the underground made extraction possible and partook in the boom of the oil industry. This was especially needed by the 1920s, as the First World War had consolidated the massive use of oil, but also tapped out the more easily accessible oilfields. As wartime technological developments aided in the exploration of the planet, its history, and its oceans, the study of fossils became essential to the growing oil industry, in particular thanks to the success of [biostratigraphy](#).

But while most scientific and academic work had focused on macro fossils, it was from almost invisible [microbial worlds](#) that the most important contributions to extractive industries were to come. Esther Applin, Alva Ellisor, and Hedwig Kniker, scientists employed by oil companies in the U.S., discovered the usefulness of microfossils, in particular of [Foraminifera](#). This discovery launched the success of [industrial micropaleontology](#), which remains a crucial tool in the exploration, extraction, and exploitation of oil and its derivatives. Paradoxically, the same tools of micropaleontology were instrumental, over the course of the 20th century, in demonstrating the adverse effects of the overconsumption of oil (and the plastics that are derived from it). They could evidence the impact of oil consumption on planetary dynamics as well as its devastating contribution to climate change. Indeed, the adventures of [micropaleontology at sea](#) after the Second World War illustrated the interconnections [of microbes and planets](#). They shed light on the complex and vital roles played by microorganisms and cast a new light on the consequences of [recirculating](#) the carbon accumulated below ground into the atmospheric cycles of our planet. But they also took part in shaping the socio-political regulatory infrastructures that struggle to mitigate climate change, and transform our use of fossil fuels to imagine and realise more sustainable futures.³

Petroleum - Modern history of oil on a Map



Petroleum: Modern History of Oil on a Map, *an animated map showing the history of petroleum.*
(Source: Geo History/YouTube)

Footnotes

1. To learn more about the complex history and uses of fossil fuels, visit "Oil Beauty and Horror in the Petrol Age". *Kunstmuseum Wolfsburg*, 2021. <https://www.kunstmuseum.de/en/exhibition/oil-beauty-and-horror-in-the-petrol-age/> (28.08.2021). ↵
2. The political economies and ecologies of fossil fuels are at the core of many fascinating books. In particular, see Timothy Mitchell. *Carbon Democracy: Political Power in the Age of Oil*. London: Verso, 2011; and Andreas Malm. *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming*. London: Verso, 2016. ↵
3. Find out more about the history of energy in Germany in this interesting report: "The History of Energy in Germany". *Planète Énergies*. 29.04.2015. <https://www.planete-energies.com/en/medias/saga-energies/history-energy-germany> (28.08.2021). ↵