Nuclear Energy and the Fossil Fuel

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ABSTRACT
In the present review an attempt has been made to obtain an approximate idea of the world situation with respect to the requirements and supply of fossil fuels, and of whether nuclear energy from uranium and thorium will be able to replace that from the fossil fuels as the latter approach their inevitable exhaustion. The initial supply of fossil fuels, reduced to a common unit of energy, consisted of about 70 percent coal, 14 percent petroleum and natural gas, and about 16 percent oil shale and tar sands. Should the world continue to be dependent upon its fossil fuels for its energy requirements, the peak of coal production would probably be reached with the next 200 years, and that of oil in about 50 years.

Of these initial fuel reserves, the United States had about a third of the world’s coal, and about half of its oil shale, but only about an eighth of the initial supply of oil. Of this last, one third has already been consumed. The reserves of coal and oil shale in the United States are sufficient for a few centuries, but the production peaks for both oil and gas will probably occur in the comparatively near future. With regard to uranium and thorium, the heat obtainable from 1 gram of either of these elements, by means of the breeder reaction, is equal to the heat of combustion of 3 tons of coal, or 13 bbl of petroleum. The uranium equivalent of all the fossil fuels in the United States is only about a third of a million tons. The so-called high-grade ores of the Colorado Plateau will yield possibly 100,000 tons of uranium, but the large reserves are contained in the low-grade deposits of phosphate rocks and black shales which contain several hundred million tons of uranium. The energy content of these low-grade deposits, occurring at a concentration equivalent to 250 tons of coal, or 1,000 bbl of oil per ton of rock, amounts to several hundred times that of all the fossil fuels combined. It appears, therefore, provided we can refrain from destroying ourselves with nuclear weapons, and provided also that the growth of the human population (which is now doubling in less than a century) can somehow be controlled, that the world at last has discovered a source of energy adequate for its needs for at least the next few centuries of the "foreseeable future."

INTRODUCTION
The evolution of our knowledge of petroleum since Colonel Drake’s discovery of oil in Titusville, Pennsylvania, nearly a century ago, resembles in many striking respects the evolution of knowledge of world geography which occurred during the century following Columbus’ discovery of America. During that period several continents, a number of large islands, and numerous smaller islands were discovered, but how many more might there be? Also during that period geographical charts had to be continuously revised in order to incorporate the new discoveries that were repeatedly being made, and also to correct some earlier speculations.
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Nuclear energy and the fossil fuels* by M. King Hubbert**. The evolution of our knowledge of petroleum since Colonel Drake’s discovery of oil in Titusville, Pennsylvania, nearly a century ago, resembles in many striking respects the evolution of knowledge of world geography which occurred during the century following Columbus’ discovery of America. To continue the navigation analogy, what we seem to have achieved is an abundance of detailed charts of local areas, with only an occasional attempt to construct, shall we say, a map of the whole world which, despite its inherent imperfections, is still necessary if we are to have even an approximate idea of where we are now, and where we are going. Why nuclear energy Before we look into why nuclear energy is the best resource, we should look into the problems faced by current techniques of producing power. Problems With Current Energy Resources Depletion of Fossil Fuels Till today, 78% of the world’s energy is derived from the burning of fossil fuels. Fossil fuels include petroleum, natural gas, and coal. As a result, fossil fuels are being depleted at rates 100,000 times faster than they are being formed. 3 pages, 1349 words. The Essay on “Fossil Fuels Improve the Planet” by Alex Epstein. wind as alternatives to fossil fuels and not