

# Segmentation of mercedes benz

Business, Industries



Case 2 Nuclear Energy: Making a Comeback? In the 2010 State of the Union address, the president called for more clean-energy jobs, with expansion of nuclear power as an alternative energy source. He declared, " To create more of these clean energy jobs, we need more production, more efficiency, more incentives. And that means building a new generation of safe, clean nuclear power plants in this country. " Other countries, such as Great Britain, are already planning to build new nuclear plants.

Although none have been built in the United States for many years, the 104 currently operating plants generate almost 20 percent of America's electricity. Wind and solar energy together generate less than 5 percent. An alloy of enriched uranium powers nuclear reactors. How large is the world's supply of uranium? How long will it last? Uranium, a metal, is relatively common and can be found in rocks and even seawater as well as in ore deposits in the earth. With 24 percent, Australia has the largest supply overall, but Kazakhstan recently declared that it had surpassed Australia's output.

Canada has less than 10 percent of the world's supply, but has the highest concentration of top-quality ore. Worldwide, about 67, 00 tons of uranium are used each year. At current demand, that supply is expected to last about 70 years. The World Nuclear Association (WNA) predicts that nuclear reactor capacity will increase by about 27 percent in the next decade and that the demand for uranium will grow by 33 percent in response. There is some debate about when the demand for uranium will be greater than the supply that can be mined economically.

Antinuclear activists point out that mineral resources are nonrenewable. Just as the world will eventually run out of oil and coal, it will also run out of uranium. Some analysts believe that this will happen sooner rather than later. Environmentalists object to destructive mining techniques. In Australia, activists are concerned with the land rights of indigenous Australians. Another potential roadblock is that uranium mining in general is impeded by a lack of infrastructure and a shortage of experienced workers, factors that drive up processing costs.

And, a still-unsolved and crucial problem is how to manage safe, long-term storage of spent nuclear rods, which continue to emit radioactivity. The World Nuclear Association disagrees with these assessments. First, not all uranium deposits have been discovered. Since 1975, the number of known deposits has tripled. Advances in geological research and more exploration will detect many more. As mining techniques improve, known deposits that are currently unreachable will become economically accessible.

The WNA predicts that at current rates of usage, known supplies will last 200 years rather than 70 or 80. Second, ore deposits are not the only sources of uranium. It is also found in nuclear weapons, available because of various disarmament treaties. The end of the Cold War in the late 1980s also meant the end of the nuclear arms race. Nuclear warheads contain high-quality enriched uranium. Utility companies and governments also have stockpiles of the metal. Third, research is ongoing to make enrichment facilities and reactors more energy efficient.

Fourth, unlike oil or coal, uranium can be recycled from spent nuclear fuel rods and from tailings (uranium left over from the enrichment process).

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These techniques should also improve over time. Other sources, such as phosphates and seawater, could become economically viable in the future.

Questions for Critical Thinking

1. What factors do you think will affect the supply and demand curve for nuclear energy?
2. Describe what type of competition you predict will arise in the nuclear energy industry.