

The New York Times

**Green**

A Blog About Energy and the Environment

---

SEPTEMBER 7, 2010, 8:26 AM

## Fresh Capital in the Uranium Fuel Race

By *MATTHEW L. WALD*

For decades, the business of enriching uranium for use in nuclear reactors was simple: companies bought the uranium and sent it to one of the plants built by the federal government as part of its nuclear weapons program. The government increased the proportion of uranium 235, the kind that splits easily in reactors.

But in the 1990s, the government sold the plants to the United States Enrichment Company, now called USEC. Meanwhile, other companies started looking at the American market.

In June, a company using European centrifuge technology — far more modern than the World War II-era system used by the United States Department of Energy and inherited by USEC — [opened a plant](#) near Eunice, N.M., on the Texas border. Industry experts hailed it as part of a “nuclear renaissance.” And in May, the Energy Department gave a [\\$2 billion loan guarantee](#) to a French firm, Areva, to build an enrichment plant in Idaho. That plant will also use centrifuge technology.

USEC, meanwhile, is trying to modernize and use centrifuges, which cut the amount of electricity required to enrich uranium by about 95 percent. But it has had trouble getting a loan guarantee or finding American companies willing to invest heavily enough.

Now the Japanese are buying in.

USEC, based in Bethesda, Md., said last week that it had [received a cash infusion](#) of \$75 million from Toshiba and Babcock & Wilcox. Toshiba [already owns Westinghouse Nuclear](#), which is based in Pittsburgh.

Toshiba and Babcock & Wilcox have agreed to buy \$200 million of convertible preferred stock in USEC to help the company raise money to commercialize a better uranium enrichment technology.

The next \$50 million is contingent on USEC’s getting the promise of a loan guarantee from the Energy Department to develop the new technology, and the last \$75 million on the company’s actually closing the deal with the Energy Department. The loan guarantee would be for \$2 billion.

The [Noble Group](#), which is partly owned by the Chinese government, is also buying stock.

Preliminary work has begun in Georgia and South Carolina on four new Westinghouse reactors.

Babcock & Wilcox is promoting a different kind of reactor, a smaller, “[modular](#)” version that

could be built in a factory and shipped to the place where it would be used.

As part of the deal announced on Thursday, Toshiba and Babcock & Wilcox each put a representative on USEC's board.

Enrichment means sorting two different types of uranium atoms. All three companies take natural uranium, which is 0.7 percent uranium 235 and 99.3 percent uranium 238, and raise the proportion of uranium 235 to a level of 3 to 5 percent, depending on customer specifications.

The investments reflect optimism on two fronts: that the worldwide market for enrichment will grow because of new plant construction and extended operation of old plants, and that a new type of centrifuge that USEC is struggling to commercialize will prove practical.

USEC applied for a federal loan guarantee two years ago, but in August 2009, the Energy Department sent the application back to the company for more work. It reapplied in July. USEC says it now has a "commercial configuration" of the new centrifuges up and running in Piketon, Ohio, but that consists of 40 machines; if it gets the loan guarantee, its first phase of deployment would include 11,000 machines.

"This is another essential step in the development of a strategic relationship that we believe will create new business opportunities for all three companies as the global fleet of nuclear power reactors grows," John K. Welch, the company's president and chief executive, said in a statement.