

Study assesses nuclear power assumptions

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A broad review of current research on nuclear power economics has been published in the *Journal of Renewable and Sustainable Energy*. The report concludes that nuclear power will continue to be a viable power source but that the current fuel cycle is not sustainable. Due to uncertainty about waste management, any projection of future costs must be built on basic assumptions that are not grounded in real data.

"The goal of this study was to determine what assumptions are key to reaching conclusions about the relative costs of technologies," says author Sarah Widder, now at Pacific Northwest National Laboratory. She performed the analysis as a science policy intern in Washington D.C. sponsored by the American Institute of Chemical Engineers . "The increasing world demand for uranium and political considerations such as the fate of the Yucca mountain disposal site are two major elements that drive conclusions in one direction or another."

Reprocessing and recycling of spent fuel is an alternative to the "once-through" policy mandated by the 1982 Nuclear Waste Policy Act. While it would minimize high-level radioactive waste and recover additional value from the fuel, the option is controversial because of the risk of weapon proliferation and the significant cost of fuel recovery.

Analyses supporting the once-through option assume a continuation in current waste management policies, although they rely on disposal at Yucca Mountain, which has now been deemed unsuitable by the current administration. Analyses supporting a closed fuel cycle, in which unused fuel is recovered and recycled, assume progress in developing new

recovery technologies and an increase in uranium costs due to international competition for resources.

More information: The article, "Benefits and Concerns of a Closed Nuclear Fuel Cycle" by Sarah Widder appears in the *Journal of Renewable and Sustainable Energy*. See: link.aip.org/link/jrsebh/v2/i6/p062801/s1

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