

# Questioning nuclear power's ability to forestall global warming

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In a new study, scientists question the sustainability of nuclear power because of anticipated declines in high-grade uranium ore. Above is Australia's Ranger uranium mill. Credit: Gavin M. Mudd

Rising energy and environmental costs may prevent nuclear power from being a sustainable alternative energy source in the fight against global warming, according to a study in the April 1 issue of ACS' *Environmental Science & Technology*.

In the article, Gavin M. Mudd and Mark Diesendorf investigate the “eco-efficiency” of mining and milling uranium for use as fuel in nuclear power plants. Advocates of nuclear power claim it has the potential to mitigate global warming. Detractors, however, link it to dangers such as proliferation of nuclear weapons and problems such as permanent

disposal of nuclear waste.

The study points out that supplies of high-grade uranium ore are declining, which may boost nuclear fuel's environmental and economic costs, including increases in energy use, water consumption and greenhouse gas emissions. In addition, newly discovered uranium deposits may be more difficult to extract in the future — a further drain on economic and environmental resources.

“The extent of economically recoverable uranium, although somewhat uncertain, is clearly linked to exploration effort, technology and economics but is inextricably linked to environmental costs, such as energy, water, and chemicals consumption, greenhouse gas emissions and broader social issues,” the authors say.

“These issues are critical to understand in the current debate over nuclear power, greenhouse gas emissions, and climate change, especially with respect to ascribing sustainability to such activities as uranium milling and mining.”

Source: ACS

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