

# New hope for tapping vast domestic reserves of oil shale

September 22 2008

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Fossils encased in an Estonian oil shale. Credit: Mark A. Wilson, Wikipedia Commons

Researchers in Canada and Turkey report discovery of a new process for economically tapping vast resources of crude oil in the United States, Canada, and other countries now locked away in rocky deposits called oil shale.

The process could boost worldwide oil supplies in the future and lead to lower prices for gasoline, diesel, and home heating oil, the researchers suggest. Their study is scheduled for the November 19 issue of ACS' *Energy & Fuels*.

In the study, Tayfun Babadagli and colleagues point out that oil trapped

in the world's oil shale deposits exceeds the proven reserves of Saudi Arabia. An estimated one trillion barrels of oil, for instance, are in the so-called Green River Formation in Colorado, Utah, and Wyoming. However, existing technology for recovering that oil, termed pyrolysis, is uneconomical because it requires high temperatures (about 900 degrees F.) and large energy inputs, but yields little usable oil.

The scientists describe laboratory scale experiments in which addition of inexpensive iron powder to oil shale, combined with heating with electric heating coils, substantially increased oil production — by more than 100 percent for some shales. "The experimental and numerical results show that field-scale oil recovery from oil shales by electrical heating could be technically and economically viable," the report concludes.

Article: [dx.doi.org/10.1021/ef800389v](https://doi.org/10.1021/ef800389v)

Source: ACS

Citation: New hope for tapping vast domestic reserves of oil shale (2008, September 22)  
retrieved 2 May 2024 from <https://phys.org/news/2008-09-vast-domestic-reserves-oil-shale.html>

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