

# Using the energy in oil shale without releasing carbon dioxide in a greenhouse world

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New technology that combines production of electricity with capture of carbon dioxide could make billions of barrels of oil shale — now regarded as off-limits because of the huge amounts of carbon dioxide released in its production — available as an energy source in a greenhouse world of the future. That's the conclusion of a report on "electricity production with in situ carbon capture" (EPICC) in ACS' journal *Energy & Fuels*.

Adam Brandt and Hiren Mulchandani explain that almost 3 trillion barrels of oil are trapped in the world's deposits of [oil-shale](#), a dark-colored rock laden with petroleum-like material. The United States has by far the world's largest deposits in the Green River Formation, which covers parts of Colorado, Utah, and Wyoming. Estimates put that total domestic oil resource at 1.2 trillion to 1.8 trillion barrels. Limiting potential use of those deposits are concerns over the large amounts of the greenhouse gas [carbon dioxide](#) released with current methods for extracting oil from shale. That's why the researchers tried to find a new way to get [energy](#) from oil shale without producing greenhouse gases.

Their answer is EPICC — a self-fueled method that generates electricity, as well as the heat needed to produce that electricity from shale. The report describes how EPIC could generate large amounts of [electricity](#) without releasing into the atmosphere carbon dioxide from burning the shale. That carbon would be captured and stored

underground as part of the production process.

Provided by American Chemical Society

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