

Title:

Zero CO₂ Emission Oil Shale Process

Abstract: (Your abstract must use 10pt Arial font and must not be longer than this box)

Due to the peak production of conventional crude oil and the higher oil price in the last couple of years, shale oil is a possible alternative source of oil in the future. The global shale oil resource could be trillions of barrels but must first be extracted by retorting the rock-like oil shale. Current retorting technologies generate and emit CO₂ similar to coal-fired power plants. New shale oil projects may need to consider reducing CO₂ emissions to meet future government environmental regulations.

This paper proposes a novel Zero Emission Oil Shale Process (ZEOSP). The concept is to produce shale oil, energy (electricity, steam) and high purity CO₂ from oil shale with near zero emission of CO₂ and other atmospheric pollutants. A mixture of high purity oxygen and CO₂ from flue gas is used in the spent shale combustion instead of air and thus achieves a concentrated CO₂ flue gas which can be captured and stored.

The solid heat carrier oil shale process UTT3000 is used as the reference original process. The conceptual process design and operation performance are evaluated to increase the energy efficiency and sequester CO₂ without affecting shale oil yield. Shale oil production cost is analyzed to provide an insight of the economical performance of the technology.

Important notes:

Do **NOT** enter author and affiliation information on this document. You will be able to enter this information online when you submit the abstract.

Do **NOT** write outside the boxes. Any text or images outside the boxes **will** be deleted.

Do **NOT** alter the structure of this document. Simply enter your title and abstract in the boxes. The document will be automatically processed – if you alter its structure your submission will not be processed correctly.