

## **De-risking actions for the industrialization of the Ecoshale™ process**

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A joint venture formed by Red Leaf LLC and Total S.A. is planning the construction and operation of a unit based on the Ecoshale™ technology to demonstrate commercially and environmentally sustainable **ex-situ oil production from oil shale from Utah's Uintah Basin**. In this process, the mined oil shales are incorporated in a sealed capsule where flue gases flowing in pipes are providing the heat required for the retorting reaction. The process has been validated at pilot scale in 2009 and the key of success of the up scaling goes through a de-risking strategy which includes the testing of the heating pipes and the construction and operation of a small size hot cell. The cell will heat and retort the shales under hydraulic pressure to recreate the conditions anticipated in the industrial capsule. Thermal transfer, mechanical and operational parameters will be tested. Safety assessment of the hot cell has been conducted and will serve as the basis for the operation of the industrial demonstration unit.