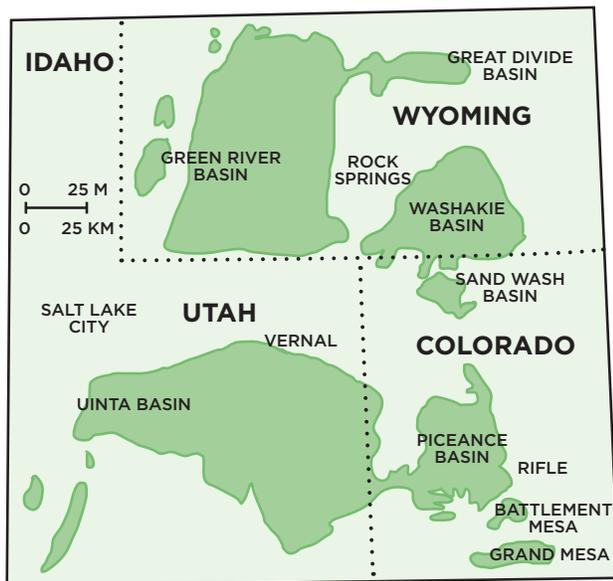




## America's Energy Resource: Western U.S. Oil Shale

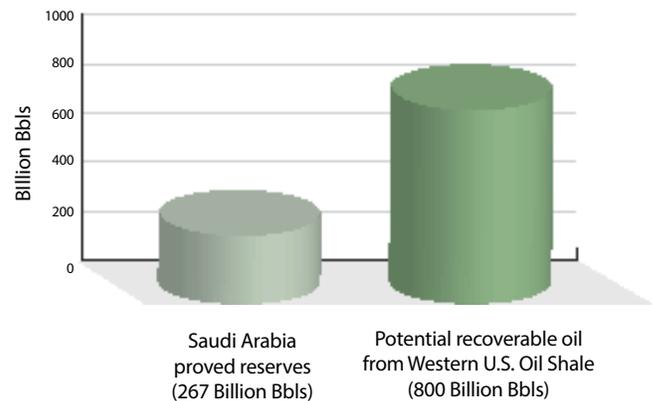
- Oil shale is a fine-grained sedimentary rock containing a solid material (kerogen) that converts to liquid oil when heated. Oil shale deposits exist in 37 countries globally, but the largest and highest quality oil shale deposits are in sparsely populated areas of Colorado, Utah and Wyoming (Figure 1).

Figure 1. Oil shale-rich basins of the Western U.S.



- Historically, oil shale has proven to be technically, environmentally and economically challenging to develop. However, through ongoing research efforts, new and innovative production technologies are emerging.
- The potentially recoverable oil from Western U.S. oil shale deposits is estimated at more than 800 billion barrels,<sup>1</sup> or nearly three times the proven oil reserves of Saudi Arabia (Figure 2).<sup>2</sup>

Figure 2. Oil reserves of Saudi Arabia vs. Western U.S. oil shale potential.



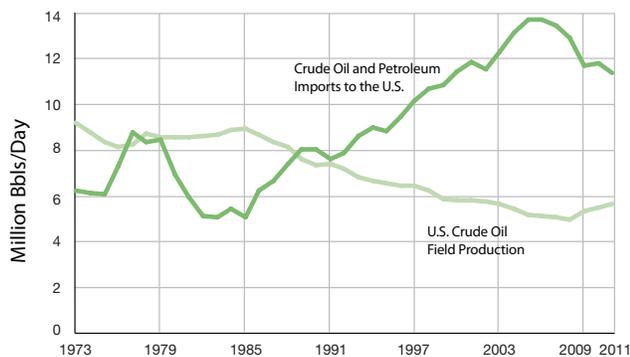
- This significant domestic resource has the potential to reduce foreign oil imports, increase and diversify U.S. transportation fuel supplies, create thousands of American jobs, and fuel U.S. economic growth.

1 Bartis et al. 2005 "Oil Shale Development in the United States, Prospects and Policy Issues," prepared for the National Energy Technology Laboratory of the U.S. Department of Energy  
2 DOE Energy Information Administration - Country Analysis Briefs

## America's Energy Security: Growing Demand, Increasing Competition for Limited Supplies

- Global demand for petroleum and other liquid fuels is projected to rise from an estimated 86 million barrels per day in 2010 to over 112 million barrels per day by 2035.<sup>3</sup>

Figure 3. U.S. oil production and imports.



Since the early-1990s, there has been a consistent gap between U.S. crude oil field production and crude oil/petroleum imports.<sup>4</sup>

- Demand growth is being driven by increasing consumption in rapidly developing countries such as China and India. These emerging economic giants are expected to continue to experience a significant increase in Gross Domestic Product and individual automobile ownership.
- In 2010, U.S. net imports comprised approximately half of our petroleum liquid fuel supply.<sup>5</sup>
- America's national security is dependent on the availability of liquid fuels. For example, the U.S. Department of Defense is the single largest consumer of energy in the country, consuming more than 5 billion gallons of fuel in 2010 for military operations.<sup>6</sup>

- Synthetic crude from oil shale offers a long-term stable energy source for U.S. military, industrial and consumer needs.



## America's Energy Choice: Increase Our Domestic Oil Supply

- Crude oil price volatility and energy market instability significantly impact our entire economy.
- In April 2011, oil reached over \$113 per barrel — then plunged nearly 32% by October, before rising nearly 44% over the next four months.<sup>7</sup>
- The need to meet U.S. transportation fuel demand with a stable, secure and affordable source of domestic supply has never been greater. U.S. oil shale development can help to reduce our dependence on foreign oil, increase our domestic energy security and significantly stabilize increasingly volatile global energy markets.
- Currently, more than 70% of western U.S. oil shale deposits are on federal lands. Most federal oil shale is closed to development despite the growing need for new sources of oil supply.<sup>8</sup>
- With access to these lands, advancements in technology and thoughtful planning, U.S. oil shale resources can be developed in an environmentally responsible and economically sustainable manner.

3 DOE Energy Information Administration, "International Energy Outlook 2011," September 2011, <http://205.254.135.7/forecasts/ieo/world.cfm>

4 DOE Energy Information Administration, "U.S. Imports of Crude Oil and Petroleum Products" and "U.S. Field Production of Crude Oil," May 30, 2012, <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MTTIMUS2&f=A> and <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS2&f=A>

5 DOE Energy Information Administration, "Annual Energy Review 2011," October 2011, <http://www.eia.gov/totalenergy/data/annual/showtext.cfm?t=ptb0501b>

6 Statement to the Subcommittee on Readiness for the U.S. House Armed Services Committee by Assistant Secretary of Defense for Operational Energy Plans and Programs (March 29, 2012), and U.S. Department of Defense Operational Energy Strategy (March 1, 2011), [http://energy.defense.gov/Burke\\_Testimony\\_FY13\\_Investments.pdf](http://energy.defense.gov/Burke_Testimony_FY13_Investments.pdf) and [http://energy.defense.gov/OES\\_report\\_to\\_congress.pdf](http://energy.defense.gov/OES_report_to_congress.pdf)

7 NYMEX crude oil price records

8 U.S. Bureau of Land Management – [http://www.blm.gov/wo/st/en/prog/energy/oilshale\\_2/background.html](http://www.blm.gov/wo/st/en/prog/energy/oilshale_2/background.html)