



# **U.S. Oil Shale Task Force Education and Outreach Activities**

**Colorado School of Mines Oil Shale Symposium  
October 19-22, 2009**

# API U.S. Oil Shale Task Force

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- U.S. Oil Shale Task Force
- Developed under auspices of American Petroleum Institute

## **Members**

- American Shale Oil (AMSO)
- ExxonMobil
- Oil Shale Exploration Company (OSEC)
- Red Leaf
- Shell Oil

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## Goals

- Educating policy-makers, thought-leaders and public at large on this important domestic resource
- Developing new stakeholders, advocates and grassroots support for oil shale development

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## **Objectives**

- Develop new 3<sup>rd</sup> party advocates for oil shale with a focus on consumer groups
- Develop Congressional and Executive Branch education campaign
- Build broader membership base for USOSTF

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## **Task Force Messaging – Info Briefs**

- Energy Security
- Economic Growth and Jobs
- Environment

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## **Our Energy Resource, Our Energy Security, Our Choice - Focus**

- Basic education on size and location of oil shale resource
- Projections on increasing global demand and U.S. import patterns
- Importance of secure transportation fuels supply for the United States

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**U.S. OIL SHALE:**  
**OUR ENERGY RESOURCE, OUR**  
**ENERGY SECURITY, OUR CHOICE**



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

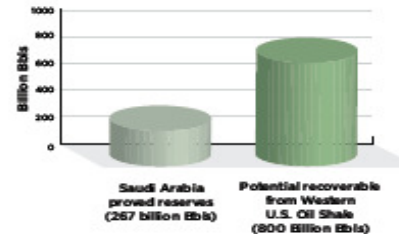
- Oil shale is a fine-grained sedimentary rock containing a solid material (kerogen) that converts to liquid oil when heated. Oil shale deposits exist in 27 countries globally. But the largest and highest quality oil shale deposits are in sparsely populated areas of Colorado, Utah and Wyoming (Figure 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 shale oil 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.



- 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.

<sup>1</sup> Bertis 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

<sup>2</sup> DOE Energy Information Administration - Country Analysis Briefs - Saudi Arabia

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## **Our Economy and Our Jobs – Focus**

- Tax Revenues and Reduced Deficits
- Job Development
- Local Community Impacts and Solutions



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## U.S. OIL SHALE: OUR ECONOMY AND OUR JOBS



### Introduction

- Development of U.S. oil shale resources will generate significant employment opportunities and substantial government revenues.
- Oil shale production could help reduce the trade deficit through increased domestic energy production.
- As the global economy rebounds and global demand for liquid fuels returns to growth, there could be upward pressure on the costs of petroleum-based transportation fuels. A U.S. oil shale industry can help to mitigate rising prices.
- With 75% of the Western U.S. resource on public lands, oil shale development can provide a significant and consistent federal revenue stream for decades.

### Our Economy: Increased Tax Revenues and Reduced Deficits

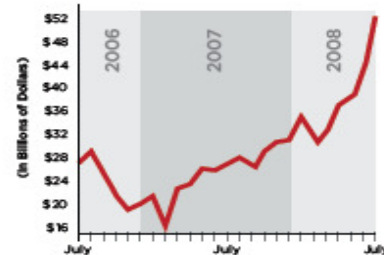
#### How can oil shale development increase tax revenues?

- A robust U.S. oil shale industry can yield significant economic benefit to our country in the form of taxes and royalty payments. The U.S. Unconventional Fuels Task Force estimated that by 2035, with oil shale production levels at 2.5 million bbl/day, cumulative public sector revenues could exceed \$400 billion.<sup>1</sup>

#### How can oil shale production help reduce the trade deficit?

- In 2008, U.S. oil consumption was about 21 million barrels per day, while U.S. production was about 5 million barrels per day.<sup>2</sup>
- In 2008, the price tag on petroleum-related products from foreign suppliers was \$342 billion, or 44% of the total U.S. trade deficit of \$764 billion (Figure 1).<sup>3</sup>

Figure 1. Value of U.S. Imports of Energy-Related Petroleum Products



- Access to and development of oil shale resources on U.S. federal lands can help to materially reduce the deficit.

<sup>1</sup> U.S. Task Force on Strategic Unconventional Fuels, "Development of America's Strategic Unconventional Fuels Resources, Initial Report to the President and Congress of the United States," September 2006.

<sup>2</sup> U.S. Department of Energy, Energy Information Administration, Petroleum Basic Statistics-February 2009.

<sup>3</sup> U.S. Census Bureau, Foreign Trade Statistics, FT 900: U.S. International Trade in Goods and Services.

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## **Protecting Our Environment - Focus**

- Protecting and Conserving Our Water
- Water Consumption and Availability
- Air Quality
- Wildlife

# API U.S. Oil Shale Task Force



## Introduction

- The API U.S. Oil Shale Task Force is committed to environmentally responsible oil shale development. Participating companies have made technological advancements that substantially mitigate environmental impacts associated with oil shale production and are committed to continued research and development in this area.
- Reducing energy usage and carbon emissions, protecting ground and surface water resources, reducing surface disturbance, and protecting wildlife resources are key focus areas, with significant capital and resources being spent on each of these issues.
- The U.S.'s DOI RD&D program provides an opportunity to consider all development effects, improve mitigation technologies and advance commercial-scale development.
- Additionally, all federal oil shale research and development projects are subject to the National Environmental Policy Act (NEPA), the Clean Air and Clean Water Acts, and the Endangered Species Act.

## Protecting and Conserving Our Water

### How will ground and surface water systems be protected?

- Technologies and best management practices (BMPs) to protect ground water during oil shale development have been commercially demonstrated in mining and chemical processing operations. For example, freeze- or grout-wall technologies can be deployed to isolate ground water from subsurface (in-situ) oil shale production (Figure 1).

Figure 1.  
Freeze wall schematic.



The Freeze Wall Test, located on a 25-acre parcel of Shell's private property in Rio Blanco County, Colorado, is an environmental study to demonstrate groundwater can be kept out of subsurface production areas using a frozen, underground barrier.

Courtesy of Shell Oil

- Alternative approaches target oil shale development well below existing aquifers, naturally isolating produced oil shale zones from ground and surface water systems.
- Federal laws and regulations with stringent environmental standards are currently in place to ensure that ground and surface water systems are protected before development operations can commence.
- Reclamation and remediation plans will also be required to ensure long-term protection after operations cease.

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## **Activities Ahead**

- Continued Development of Grassroots Oil Shale Advocates
- Bring New Consumer Entities into the Debate
- Support Key Allies
- Continued Education of Thought Leaders