Oil Shale - Social and Economic Considerations
Discussion Paper
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Western U.S. oil shales are being developed in Colorado, Utah and Wyoming. It is an area rural in character with a small population concentrated in and around a few small communities. It is an area that has seen mining, agriculture, oil and gas and tourism as its major sources of employment and tax revenues. A natural gas drilling, production and pipelining boom brought many new people to the region a few years ago. Now, this industry is experiencing a reduction in size due to low natural gas prices, increased regulation, and a slow economy. This kind of growth, and subsequent downturn, is typical of resource extraction industries, and has been seen periodically in past decades. In fact, in the 1980’s, the same cycle occurred in oil shale when oil prices dropped from $40 to $10. Oil prices have declined from a high of $140 per barrel in 2008. What price is sustainable after the recession ends is unknown, but it is likely higher than the low of about $35 per barrel reached in 2009.

The economic benefits and social implications of oil shale development are being presented at a time of increased financial stress upon developers to continue research funding, reduced regional employment, and local governments coping with reduced tax revenues.

Economic Challenge
The economic challenge for oil shale developers is to demonstrate technologies that can be sustainable and continue to operate through the ups and downs of energy pricing. Research and development is currently being conducted on a number of projects in Colorado and Utah to do just that [reference: web site http://www.oilshaleassoc.org/oil_shale_project.html]. These projects are being carried out on BLM R&D oil shale leases, private properties, state lands, and in laboratories around the country.
The question is often asked “at what price of petroleum will shale oil be competitive?” The answer is not clear at this time because most projects are in the research and development stage, but estimates made in the last few years range from $30 to $95 per barrel. The range is so large because new technologies that are under development have not reached a scale of production to estimate commercial plant capital and operating costs, and there are still technological hurdles to be overcome before credible estimates can be made. Costs for the projects that were on the drawing boards in the 1980’s put oil prices in the range of $40 per barrel for a profitable commercial operation. Merely escalating those costs to current dollars is fraught with errors, but is the source of the high end value of $95 per barrel. This high end figure does not take into account the advances in science and engineering since that time, so costs would likely be lower even for the same technologies.

Likewise new technologies envision lower manpower requirements that will result in lower costs and lesser social impacts. Oil shale is expensive to extract and only time will tell if it can become competitive with conventional petroleum. Major developers active in oil shale research believe it will be several years before the economic answers are in hand. Investment of billions of dollars will be required for individual plants producing 100,000 barrels per day. When an industry does emerge it will develop incrementally, with multiple technologies, and will meet all regulatory requirements. There will be no overnight production of millions of barrels per day of shale oil with the attendant social and environmental impacts.

Regional Social Impacts
The social impacts of an oil shale industry may or may not be significant depending upon the scale of development, its timing and what other industries have come and/or gone from the region at the time oil shale is commercialized. The key potential impacts are shown below:

• Shortage of public facilities and services to deal with an influx of oil shale workers, their families, and support businesses (e.g. roads, schools, fire/police, health care, and utilities)
• Lack of upfront funding for infrastructure improvements because royalty and severance tax revenues start after shale oil production begins, but impacts start during construction. Oil shale developers are agreeable with making advance payments for infrastructure needs, especially if payments can be credited against future taxes.

Regional Social Benefits
The social benefits of an oil shale industry are significant, and include the following:

• Public sector revenue distribution in the form of ad valorem property and production taxes, severance taxes, royalties, sales and use taxes, and various license and fee revenues for affected governments and the state.
• Economic expansion and diversification for the Region. Oil shale is likely to become commercial as natural gas drilling begins to wind down.
• Educational growth, skill development, and opportunities to educate and train a sustainable workforce. The area can become a center for unconventional energy research and development.
• Increased opportunities for existing local businesses and growth of opportunity for new business development.
• Long-term employment opportunities including high paying jobs in the oil shale and supporting industries, creation of numerous support industry jobs across a wide range of skills and occupations, a source of workforce retention and attraction versus out-migration, and expansion of regional commercial and service industries.
• Fiscal support for public sector infrastructure including enhancements in transportation, community services, health care, and social services through public sector revenue distribution.

National Energy Benefits
The benefits to the nation as a whole are significant. Oil shale deposits in the United States are estimated to contain over 2.5-trillion barrels of oil from oil shale averaging over 25-gallons per ton. The three states of Colorado, Utah and Wyoming alone contain an amount of oil from oil shale that is comparable with the conventional oil reserves in the Middle East. As for national security, the principal value of oil shale production would be its contribution to a portfolio of measures intended to increase oil supplies and reduce oil demand.

Bottom line
Balancing social benefits and impacts is the key. As one industry source said at the Oil Shale Symposium in 2008“ I think we all need to have an understanding of how we can move forward in a way that everybody benefits” (Michelle Thomas, ExxonMobil, as reported in the Grand Junction Sentinel by Dennis Webb on October 18, 2008).