Mines prof says Obama, Salazar stalling on oil shale the way Bush did on climate change

By David O. Williams | *04.12.11 | 12:25 pm*

Dr. Jeremy Boak, a leading expert on oil shale technology at the Colorado School of Mines, says the Obama administration is dragging its feet on oil shale production in the United States much the way the Bush administration stalled on climate change policy.

Dr. Jeremy
Boak

Boak, the director of the Center for Oil Shale Technology and Research at the Golden-based school, recently blasted Interior Secretary Ken Salazar's plan to take a "fresh look" at Bush administration rules for oil shale leasing on U.S. Bureau of Land Management (BLM) land in Colorado, Utah and Wyoming. Salazar in February said the BLM needs to have a better idea of the "amount of power needed, water needed and the impact to wildlife habitat and watersheds."

"It's curious to hear the same sort of arguments being made by this administration that were made by the Bush administration for not doing anything on climate change," Boak told the Colorado Independent. "We've got to have all the answers before we can move."

Citing the "driest period on record in the Colorado River basin, Lake Mead water levels at historic low levels and impacts on the agricultural economy," Salazar has said the Bush oil shale rulemaking "put the cart before the horse" by setting royalty rates at 5 percent for the first five years of oil shale production and opening up 2 million acres of BLM land to leasing before more research and development was completed.

Oil shale production has never been proven commercially viable in the United States because the process of heating shale rock to extract organic kerogen and then refine it into oil consumes a great deal of water and conventional power. A Shell official in 2009 confirmed to the Colorado Independent that his company's process consumes at least three barrels of water for every one barrel of oil – a significant amount in the arid Colorado River basin.

Boak says that figure may wind up being closer to a one-to-one ratio, but regardless, he says the administration has its answer and needs to move oil shale research and production forward in light of rising global fuel costs and the increasing need for domestic energy production.

"It is a distortion to say we have to have an answer about water use because we have an answer about water use and either that answer is good enough – that three barrels per barrel is something we can live with – or it isn't," Boak said. "If it isn't, then it's incumbent on both the government of Colorado and the federal government to say why it isn't and to say what is OK, and they have completely evaded that responsibility."

Sen. Steve
King

State Sen. Steve King, R-Grand Junction, recently sent a letter to Colorado Sens. Mark Udall and Michael Bennet seeking support for a provision in a U.S. House funding resolution that would have blocked Salazar's bid to revisit the Bush oil shale rules. Those rules were passed in the waning days of the administration in 2008 and promptly challenged by environmental groups. Salazar's revisiting of the rules is part of a settlement with those groups.

"Salazar's decision to enter into a wink-and-a-nod settlement with the environmentalist opponents of oil shale and appease them by scoping out a new round of restrictions and royalty requirements is exactly the wrong policy for the Western Slope, for Colorado and indeed for America," King wrote.

Boak also refutes a Rand Corporation report predicting it will take up to 10 new coal-fired power plants to generate the heat needed to produce just 1 million barrels a day of the estimated 2 trillion barrels of oil equivalent trapped under an approximately 16,000-square-mile area under northwestern Colorado, eastern Utah and southeastern Wyoming called the Green River Formation. New research by Shell and other oil companies indicates the heat will come from gas, he said.

"Their primary option is to use the natural gas that comes along with the oil," Boak said. "That's a significant fraction, especially for these companies that are doing in-situ. When you cook it more slowly you get a higher gas-oil ratio, so you get a higher fraction of it as natural gas."

Shell's in-situ process involves heating the rock deep underground rather than mining the shale rock and retorting it on the surface.

Still, conservationists and alternative energy advocates say it's prudent to take a slower approach on leasing and royalty rates until more research is completed.

Randy Udall

"I personally remain somewhat skeptical that oil shale will be unlocked, but if private companies want to spend money doing work in that direction, more power to them – as long as it's done in a balanced and coherent way," said Randy Udall of the Association for the Study of Peak Oil & Gas – USA. Udall, the brother of Sen. Mark Udall, says it's not out of the question to at least study oil shale production, despite its potential heavy industrial impacts on public lands.

"It is reasonable for companies like Shell that are having great difficulty increasing their own oil production – in fact Shell's oil production of crude oil has been trending down over the last decade – so there are lots of oil companies that kind of wonder what comes next," Udall said. "At least some of them think it's reasonable for them to spend some of their RD&D money looking at oil shale, even though all of them – experienced petroleum geologists – understand what a big lift it will be ever to commercialize oil shale."

Exactly why Boak says the initial 5 percent royalty rate set by the Bush administration makes sense. After five years that rate climbs 1 percent a year until it reaches a 12.5 percent cap for the 20 to 30-year life of the lease. The discounted rate up front allows companies to recoup capital costs that will likely be much higher than conventional oil and gas drilling, Boak says.

The size of the area opened for leasing is also under review by the BLM.

"We're not sure that 2 million acres should be allocated for this type of use, but nonetheless we're willing to go back and revisit that issue and through an amendment to our land-use planning process make that determination," BLM Director Bob Abbey said in February.

Asked why such a large swath is needed, Boak said, "Because it's where the oil shale is. Otherwise you're making judgments about which oil shale is OK to lease out and which is not instead of letting industry decide which it would like to lease out and which it would not."

Editor's note: This is the first in a two-part series on the future of the oil shale industry in Colorado in the wake of recent Middle East unrest and steadily rising oil prices. Part two will run Wednesday.

Categories & Tags: Arrangement| Economy/Finance| Environment/Energy| Bob Abbey | Colorado School of Mines | Jeremy Boak | Ken Salazar | Oil Shale | Randy Udall | Shell Oil | Steve King | water consumption |

Colorado oil shale years from production despite spiking gas prices

By David O. Williams | *04.13.11* | *11:46 am* | More from The Colorado Independent

Observers of the century-long quest to extract oil from the shale rocks of Colorado's Western Slope are fond of saying "oil shale is the fuel of the future … and always will be." Never commercially viable because of the costs and resources needed to heat and extract the kerogen trapped in the rocks, an estimated 2 trillion barrels of shale oil remains locked up – perhaps forever.

But why then has Shell spent an estimated $200 million so far on research, development and demonstration (RD&D) at its Mahogany Research Project in western Colorado? And at what point will gas prices rise so high that the cost of producing shale oil suddenly makes sense?

Jeremy Boak

"All of the major companies are doing oil shale because they think it's an interesting and high-potential area, but they're not in a hurry to make it productive," said Jeremy Boak, director of the Center for Oil Shale Technology and Research (COSTAR) at the Colorado School of Mines in Golden. COSTAR's research is described on its website as "industry-driven and science-guided."

"With [oil] prices going back up through the roof again," Boak said, "[companies have] an awful lot of things to spend their money on and some of them more near-term than oil shale. The big budgets tend to move toward things that are a little closer in." Still, Boak maintains the state and federal governments should be doing far more to encourage oil shale production than the current administrations.

The OPEC oil embargo during the Yom Kippur War saw gas prices in the United States spike from 38 cents a gallon in 1973 to 55 cents a gallon in 1974, in part prompting an oil shale boom in Colorado that culminated in the "Black Sunday" crash of 1982. Exxon literally pulled up stakes overnight and turned communities like Parachute, Rifle and Battlement Mesa into ghost towns.

Exxon is one of the companies pursuing a more scaled-back RD&D lease being offered by the Obama administration, which announced in February it was taking a "fresh look" at the Bush administration's so-called "midnight regulations" in 2008 that established a royalty structure and opened up 2 million acres of U.S. Bureau of Land Management land in Colorado, Utah and Wyoming for potential oil shale leasing.

"The previous 2008 regulations made critical decisions such as royalty rate before the RD&D program had a chance to deliver information and answers," U.S. Interior Secretary and former Colorado Sen. Ken Salazar said in February. "They put the cart before the horse, and in so doing they heightened the risk of speculation and bad decisions and yet another oil shale bust."

But Exxon officials say they're keenly aware of past mistakes and determined not to repeat them.

"It sounds to me like there was a lot more hype back then, but it's always hard to tell where the hype came from," Boak said. "Was it really the companies that were hyping it or was it the people out there who thought they could buy 5,000 acres and make a killing? Land speculators. Was it the large corporations or was it the Bernie Madoffs of their era that were really trying to cash in on this?"

Ramped up in the late 70s with the embargo fresh in everyone's minds, oil shale crashed once Middle East oil began flowing freely and the labor-intensive process of surface mining and retorting oil shale was no longer cost-effective. But 30 years later oil prices are skyrocketing again in the wake of ongoing political upheaval in the Middle East and Northern Africa.

The U.S. Energy Information Administration on Monday put the average price for a gallon of regular gasoline at $3.79, closing in on the peak of $4.11 a gallon set on July 17, 2008. In Europe, gasoline broke the $8.60 a gallon barrier this spring as events unfolded in Tunisia, Egypt and Libya.

But even at those prices, commercial oil shale production is of limited interest to Europeans. While still part of the Soviet Union, Estonia developed a commercial oil shale industry, but there have been growing environmental concerns since that nation became part of the European Union.

Boak says companies in Estonia, Brazil and China continue to blaze the oil shale trail, with one Estonian firm "hunting for properties" appropriate for oil shale development in the United States. Still, none of the foreign firms have been able to produce much more than a few thousand barrels of oil a day – a drop in the bucket in terms of global demand. And now the European Union is considering banning oil shale and tar sands development because of studies showing higher greenhouse gas emissions than from conventional fuels.

Meanwhile, Republican members of Colorado's congressional delegation continue to beat the oil shale drum. Just last month in a guest column in the Grand Junction Daily Sentinel, 3rd Congressional District Rep. Scott Tipton wrote: "The development of [oil shale] resources would lead to tens of thousands of good paying jobs and help stabilize our energy supply – putting an end to spikes in gas prices."

Juxtapose that statement with what Tom Yelverton of ExxonMobil told the Daily Sentinel late last year: "At best, commercial production is a decade away and most likely more."

Rep. Doug Lamborn of Colorado's 4th Congressional District is a big backer of stepping up domestic oil and gas production, including oil shale, on the state's Western Slope.

"It is all well and good to propose measures that may pay off decades in the future, such as alternative energy research and higher CAFÉ standards for vehicles," Lamborn states on his website. "The most urgent and immediate solution though is to ramp up domestic production of oil and gas right now."

Even the companies deeply involved on oil shale research say it's years from becoming a commercial reality: "In fact, it could take up to 10 to 12 years of additional research, environmental analysis and permitting before a company could develop a federal oil shale lease," Tracy Boyd of Shell told the Glenwood Post Independent in late 2008.

Editor's note: This is the second in a two-part series on the future of oil shale in Colorado in the wake of rising gas prices and mounting unrest in the Middle East and North Africa. Click here for part one.

Categories & Tags: Colorado | Economy/Finance | Environment/Energy | Government Accountability/Reform | Issues | Politics | Colorado | Colorado School of Mines | costar | Doug Lamborn | Exxon | gas prices | middle east unrest | Oil Shale | Scott Tipton | Shell | WSP |