Shell's decision to abandon Colo. research project stuns longtime observers

Scott Streater, E&E reporter
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http://www.eenews.net/energywire/2013/09/25/stories/1059987815

Royal Dutch Shell PLC yesterday startled industry observers by announcing it is pulling out of a decades-long effort in Colorado to research and develop technologies capable of extracting vast oil shale reserves that proponents say could meet the nation's energy needs for more than a century.

"The energy market has evolved since Shell first started its oil shale research in 1981," Carolyn Tucker, communications business adviser for Shell's U.S. Rockies region in Denver, said in an email to *EnergyWire* confirming the company's decision. "We plan to exit our Colorado oil shale research project in order to focus on other opportunities and producing assets in our broad global portfolio."

Shell's U.S. subsidiary has been at the center of oil shale research in the Rocky Mountain region. The Bureau of Land Management has granted Shell three federal oil shale leases in the Piceance Basin in northwestern Colorado, and the company has been actively doing research and development in the state since 1996.

Northwestern Colorado, northeastern Utah and southwestern Wyoming sit atop a 16,000-square-mile section of the Green River Formation, which is believed to contain more than half the world's oil shale reserves. Some officials estimate the formation contains as much as 1.5 trillion barrels of recoverable oil shale -- more than three times the total that will ever be produced in the oil fields of Saudi Arabia.

As recently as August 2012, BLM approved two 10-year oil shale research and development leases on a total of 320 acres of federal land in Colorado that cleared the way for both Houston-based Exxon Mobil Exploration Co. and Rifle, Colo.-based Natural Soda Holdings Inc. to test technology that could ultimately lead to finding an economical process to extract crude oil from shale rock on a commercial scale (*Greenwire*, Aug. 31, 2012).

But Shell is now the second major energy company in less than two years to pull out, following Chevron Corp.'s decision in February 2012 to abandon its federal oil shale lease in the Piceance Basin. Chevron officials said the company wanted to concentrate on other priorities (*Greenwire*, Feb. 29, 2012).

Steven Hall, a BLM spokesman in Denver, said the agency had no comment on Shell's announcement.

BLM in March approved a plan to allow oil shale and oil sands research and development on roughly 800,000 acres of public lands in Colorado, Wyoming and Utah, prompting a coalition of environmental groups to file a federal lawsuit claiming BLM had not done enough to ensure the decision would not jeopardize threatened and endangered species (*Greenwire*, July 29).

Tucker said in the email yesterday that the company's focus now "is to work with staff and contractors as we safely and methodically stop research activities at the site."

The news startled Glenn Vawter, executive director of the National Oil Shale Association in Glenwood Springs, Colo.

Vawter, who has been a longtime proponent of developing the vast oil shale deposits estimated to sit beneath the Green River Formation, said Shell's decision is a blow to the industry.

"It's very disappointing," he said yesterday. "I've been at this for the better part of 40 years, and Shell has been a stalwart in the industry. They were active back in the 1970s and '80s, then they began in the 1990s to develop this *in situ* technology that I think works. So it's very disappointing to see them leave at this stage."

Indeed, Shell has had some notable success in its research in Colorado.

Shell eight years ago produced 1,700 barrels of oil from a 30-by-40-foot test area, called the Mahogany Demonstration Project South. The Mahogany technology entailed building an underground freeze wall around the oil shale test site, pumping any subsurface water out of that plot and heating the oil shale rock vein for four years to 650 to 700 degrees Fahrenheit (*EnergyWire*, April 9, 2012).

But David Abelson, Western Resource Advocates' oil shale policy adviser in Boulder, Colo., said he believes Shell finally woke up to the fact that there is no economical way to develop oil shale.

"From our understanding, [Shell was] sitting on the absolute best, richest deposits in Colorado, and they have come to the conclusion that the economics simply don't work," Abelson said.

"When we look at the economics of oil shale, that's always been the case," he added. "The fundamental problem has been and remains the rock itself. We saw Chevron reached the same conclusion 18 months ago. So I'm not surprised by today's announcement."

Vawter, however, said he believes that some company that is willing to stick to it will eventually solve the puzzle and develop an economical way to tap the enormous oil shale resource.

He pointed to projects being developed in Utah by Red Leaf Resources and Enefit American Oil, which is the U.S. branch of the Estonian national energy company Eesti Energia.

"I do think it's going to be many decades before we are away from fossil energy, so to have this resource ignored, it's really too bad, because I think it will become important in the future," he said.

Shell shock: Rio Blanco oil shale project axed

By Dennis Webb
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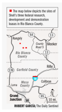
http://www.gjsentinel.com/news/articles/shell-shock-8232rio-blanco-oil-shale-project-axed/



In a major setback to the effort to develop oil shale in the United States, Shell is closing down its research and development project in Rio Blanco County.

The company was the biggest player in oil shale in Colorado, having begun working in western Colorado's Piceance Basin in 1996 and holding three federal research, development and demonstration leases.

"It's very discouraging to see Shell leave because they've been the stalwarts in this business for a couple of decades really," said Glenn Vawter, executive director of the National Oil Shale Association industry group.

"Whether it's the death knell for the oil shale industry we'll have to wait and see," he said, pointing to several other ongoing projects in Colorado and Utah.

Oil shale is kerogen locked up in rock that companies have tried for generations to economically produce oil from through heating. World-class oil shale deposits exist in northwest Colorado, and Shell has been evaluating means of producing oil by cooking shale in place underground, or in-situ.

Chevron, which also received a research and development lease from the BLM in Rio Blanco County, decided early last year to divest itself of the lease, saying it wanted to focus on other priorities.

Critics of oil shale development projects, particularly on federal land, worry about the potential water demands and environmental and community impacts.

Ross Lane, director of the Western Values Project oil and gas accountability organization, said in a prepared statement, "Melting oil shale rock at temperatures exceeding 700 degrees over months or years is an expensive and risky proposition. It's no wonder both Shell and Chevron stopped gambling on oil shale. The economics just don't make sense."

Shell spokeswoman Carolyn Tucker said the decision reflects an evolving energy market since Shell began its oil shale research in 1981.

"We plan to exit our Colorado oil shale research project in order to focus on other opportunities and producing assets in our broad Global portfolio," she said in an email. "Our current focus is to work with staff and contractors as we safely and methodically stop research activities at the site."

NO QUICK EXIT

Tucker said in an interview that employment at Shell's oil shale research site has ranged anywhere from 10 to 50, depending on activity levels.

"It's not going to be an abrupt exit," she added.

Shell has obligations and projects it needs to wind down, including reclamation and decommissioning work required by the Bureau of Land Management, she said.

Contacted late Tuesday afternoon about Shell's plans, the BLM was unable to provide immediate comment.

Just last month, Shell announced plans to sell its oil and gas project in Routt and Moffat counties. That followed an earnings decline and a review of Shell's various oil and gas projects in the Americas, followed by a decision to keep those with the most growth potential.

At that time, Tucker said that decision had no bearing on its oil shale project, calling it a separate business that's still in the research stage.

But she said this week's decision results from another review project looking specifically at Shell's oil shale assets, which also include holdings in Jordan and Canada.

"A number of factors went into the decision. Based on those many factors we've chosen to put those resources into the other oil shale assets and not in Colorado," Tucker said.

In 2010, Shell withdrew an application for shale-related water rights on the Yampa River, saying the global economic downturn was affecting its project's pace, but that the project was continuing.

TOUGH TIME FOR ENERGY

Rio Blanco County Commissioner Jeff Eskelson said it's still a tough time for the energy industry and it's not surprising to see a company end an R&D project. He said the number of jobs affected is relatively low.

"But still, any jobs that leave are going to hurt so we don't like that."

As for what Shell's announcement could mean for the future of the oil shale industry, Eskelson said Enefit is "going great guns" on a project just across the border in Utah, to the point that Rio Blanco County is trying to figure out how to get roads to the facility due to the jobs being projected.

"It looks like the future of oil shale right now is over there in Utah," said Vawter, who also pointed to the work Red Leaf Resources is doing there.

The Utah projects involve surface mining, while projects in Colorado have been focusing on in-situ development. American Shale Oil, or AMSO, continues to pursue a Rio Blanco County project involving a federal RD&D lease. In addition, the BLM late last year issued a second round of RD&D leases to ExxonMobil Exploration Co. and Natural Soda Holdings, Inc., both for Rio Blanco County in-situ projects.

But Vawter is struck by the decisions of two major companies, Shell and Chevron, to back away from their shale projects.

TWO PULLOUTS

"We've always kind of decided that if the big oil companies put their money and time into it it's going to be a success, but over the years that's really not materialized. Maybe it's time for the entrepreneurs to come in and decide if this industry is going forward," he said.

ExxonMobil's project represents a return to oil shale after it pulled out of a major undertaking in 1982, leaving thousands in the area without jobs.

Unlike ExxonMobil's prior undertaking, Shell had been taking a lower-key but methodical and longer-term approach to oil shale.

It has conducted several pilot projects, including using heater bores to heat and produce oil from underground and successfully testing a freezewall technology designed to protect surrounding groundwater from heated areas.

THREE FEDERAL LEASES

Much of its work to date has been on its own land, but it recently finished a construction project on one of its three federal leases and began moving forward there with solution mining of nahcolite, or baking soda. It planned to test whether it can produce both nahcolite, and then shale afterward in the same formation.

"We've done a tremendous amount of work in Colorado oil shale. Some of the technological advances are really strong. We've employed some of the learnings and breakthroughs in Colorado to the other oil shale assets," Tucker said.

Shell's three leases each entail 160 acres, but with the option to convert them to commercial leases each covering about eight square miles if they meet certain criteria.

As for the possibility of selling any assets, "Those discussions are probably in the really early stage in terms of what to do with the project," Tucker said.

She noted that Shell also owns about 50,000 acres in and around the Piceance Basin, acquired for oil shale and other reasons.

"We've been a landowner in the area for over 50 years so we're not going to be making any decisions in the short term on any of those aspects either," she said.

As part of a lawsuit settlement, the BLM is re-evaluating its commercial oil shale leasing rules, including royalty rates. Shell has argued in favor of the existing rules and cited a need for regulatory certainty.

Tucker on Tuesday declined to say if the federal government's approach to oil shale contributed to its decision.

"It isn't the rules that made this impossible, it's the economics," said Jim Spehar, a former Grand Junction mayor and Mesa County commissioner who supports shale reforms the BLM has been undertaking.

" … This is just the latest example of a long string of oil shale promises that have fallen victim to the economic realities," he said.

FOCUS ON FRACKING

Among those realities is the industry's growing success in producing conventional oil from shale through hydraulic fracturing. The Bakken shale play based in North Dakota is producing more oil in a day than the 550,000 barrels per year projected for oil shale 20 years from now under one mid-range projection, Spehar said.

Fracking also has resulted in abundant natural gas resources being produced from shale, and that gas is increasingly being used as a transportation fuel. Spehar noted that also on Tuesday, Shell announced the selection of a location in Louisiana for a potential $12.5 billion natural-gas-to-liquids facility.

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Shell Oil's shutdown of oil shale project not a first, and no surprise to some

Cathy Proctor

http://www.bizjournals.com/denver/blog/earth_to_power/2013/09/shell-oils-shut-down-of-oil-shale-rd.html

It will take some time for Royal Dutch Shell's U.S. subsidiary to shut down its research into producing crude oil from western Colorado's underground oil shale reserves, according to company spokeswoman Carolyn Tucker.

Shell, which had been trying various ways to turn layers of rock called oil shale into crude oil since 1981, announced Tuesday the company would shut down its oil shale research operations in Colorado and turn its attention elsewhere.

But it's not simply flipping the switch, Tucker said.

"Once the decision was made to exit the project, we implemented an analysis of the entire project — where we are, what needs to be done, where are we on the different work streams on the site, and figuring out the best and safest way to wind down those activities," Tucker said.

"It's going to take time. We can't just walk away from this."

Shell's research focused on an in situ process that involved heating the underground rock layers, called kerogen, to release the oil from the rock. The site had a staff that ranged from 10 to 50 employees and contractors depending on the activity, Tucker said.

"We're in the process of talking to staff and contractors," she said. "We're shifting from research to decommissioning and reclamation. Basically, how to begin breaking down the equipment and working on it safely, plugging and abandoning everything."

Some aren't surprised by Shell's announcement — coming after other company decisions to market oil and gas assets around the United States, including in northwestern and southeastern Colorado.

"Honestly, I'm not surprised," said David Abelson, the oil shale policy adviser for Boulder-based **Western Resource Advocates**, an environmental advocacy group.

"This announcement confirms what we've been saying for a long time, which is that the fundamental problem has been and continues to be the rock itself."

Abelson said it's simply too expensive and too hard to turn oil shale rock into a fuel source profitably.

"The economics haven't worked in favor of commercializing these developments," he said.
Oil shale, which has been the target of research efforts for decades, differs from the shale oil, also called tight oil, that is the source of a new boom in crude oil

production across the nation and in northern Colorado.

Oil shale is an underground rock layer in western Colorado, Utah and Wyoming that holds kerogen.

The federal **Bureau of Land Management** has estimated the U.S. oil shale resources in the three states could hold 1.23 trillion barrels of oil — five times the proven reserves of Saudi Arabia.

Colorado's oil shale industry showed great promise in the late 1970s and early '80s, when development of the estimated 300 billions barrels of "recoverable" oil in western Colorado drew plans for big developments to the area.

Then Exxon announced on May 2, 1982, that it immediately would scuttle its multibillion-dollar research effort known as Colony Shale Oil Project. The day became known as "Black Sunday."

By 2001, only Shell was still pursuing its research — albeit very quietly.

The federal Bureau of Land Management has reached several research-and-development leases with various companies to test oil shale possibilities on public lands. The companies included Shell, American Shale Oil, and Chevron in Colorado; and Enefit American Oil and Red Leaf Resources in Utah.

Also, **ExxonMobil Exploration** Co. and Natural Soda Holdings Inc. in August 2012 received 10-year federal leases from the BLM to conduct research, development and demonstration on 160 acres in Rio Blanco County, about 35 miles southwest of Meeker. The companies will be testing underground, or in situ, technologies that heat solid oil shale to convert it into recoverable liquid petroleum, much as Shell was doing.

Chevron announced it would abandon its research into oil shale in early 2012. And now Shell will be dropping its efforts as well.

Tucker said Shell has "made some tremendous strides" in developing technology that could be used in oil shale development. The company is using what it's learned in Colorado on other oil shale projects it has in Canada and Jordan, she said.

"I don't think oil shale is a nonstarter," Tucker said. "We're interested in oil shale as well. We're just exiting the oil shale project to focus resources elsewhere."

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Shell pulling out of Colorado oil shale research project

Cathy Proctor

http://www.bizjournals.com/denver/blog/earth_to_power/2013/09/shell-pulling-out-of-colorado-oil.html

A month after Royal Dutch Shell's U.S. subsidiary said it would pursue its oil shale research project in Colorado while selling off other oil and gas assets, the company has reversed its decision.

"There's been a shift in our oil shale project," spokeswoman Carolyn Tucker said Tuesday.

"The energy market has evolved since Shell first started its oil shale research project in 1981. We plan to exit our Colorado oil shale research project in order to focus on other opportunities and producing assets in our broad global portfolio," she said in an email.

"Our current focus is to work with staff and contractors as we safely and methodically stop research activities at the site," she said.

The announcement regarding the closure of Shell's oil shale research and development work comes as the company announces plans to put its assets on the market across the United States, including oil and gas assets in northwestern and southeastern Colorado.

Shell on Aug. 1 reported a 60 percent drop in second-quarter results — largely due to a $2 billion write-down of its North American shale assets due to "the latest insights from exploration and appraisal drilling results and production information."

The company said it planned to sell some of its North American assets.

In August, Tucker said the plans to sell assets didn't include Shell's oil shale research.
"The recent divestments do not affect oil shale," Tucker said at the time.

Oil shale, which has been the target of research efforts for decades, differs from the shale oil, also called tight oil, that is the source of a new boom in crude oil production across the nation.

Oil shale is an underground rock layer in western Colorado, Utah and Wyoming that holds kerogen, which must be heated to release the crude oil.

The federal Bureau of Land Management has estimated the U.S. oil shale resources in the three states could hold 1.23 trillion barrels of oil — five times the proven reserves of Saudi Arabia.

But scientists have spent decades trying to unlock oil shale's bounty, and many believe that breakthroughs are years away — if they ever happen.

Chevron, another Big Oil major, abandoned its oil shale research efforts in February 2012.

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Shell shuts down oil shale pilot project near Rifle

By John Colson

September 24, 2013

http://www.postindependent.com/news/8272853-113/oil-company-shale-shell

GLENWOOD SPRINGS — The Royal Dutch Shell energy company has pulled the plug on its pilot oil shale development project in the Piceance Basin near Rifle, according to an announcement by the company on Tuesday.

Only a month ago, according to a story in the Denver Business Journal, the company had announced it planned to pursue its oil shale research while divesting itself of other oil and gas assets.

But late on Tuesday, company spokespeople were confirming that Shell would no longer be actively developing its three R&D (research and development) leases that had been touted by the industry as the most promising technology currently being pursued.

The company's research has been focused on the idea of inserting heating rods into the deeply buried oil shale deposits in western Colorado to liquefy and extract an oil-like substance called kerogen. The company also was planning to surround the extraction area with a secondary set of probes that would freeze the enveloping lands and prevent contamination of nearby water resources by the kerogen.

Shell is the third big energy company to back away from the idea of developing an oil shale industry based primarily in the Piceance Basin, which covers parts of western Colorado, southern Wyoming and eastern Utah.

The first was Exxon, which in May 1982 shut down its oil shale mining and retorting project up Parachute Creek, putting more than 2,000 workers out of their jobs and prompting an economic recession that affected the entire state for years.

More recently, Chevron in 2012 decided to divest itself of its own R&D lease up Roan Creek.

Shell officials could not be reached for comment about the announcement.

According to statements attributed to Carolyn Tucker, a spokeswoman for Shell, the company had anywhere from 10 to 50 employees working at its pilot project, depending on what was going on at any given time, and the company is committed to ensure that its staff is not left high and dry by the decision to pull out.

In addition, Tucker is quoted as saying to reporters, the company has obligations such as reclamation of its project site that it must take care of before it can finally walk away from the project.

According to Denver Business Journal reporter Cathy Proctor, Shell is planning to sell off many or all of its oil and gas assets in Colorado, due to a drop in earnings reported in August and disappointing performance of some of its oil and gas businesses.

Glenn Vawter, director of the National Oil Shale Association, told the Post Independent on Tuesday, "I'm very disappointed, of course, because Shell has been a stalwart in the oil shale industry for decades. To have them leave is very discouraging."

He said this may mean a change in the direction taken by companies involved in oil shale development.

"Ironically, we've always thought that when the multinational oil companies got involved, we'd see [oil shale as a marketable product] succeed," he said. "But it may be the more entrepreneurial, smaller companies that do it. Maybe they'll hang in there."