THE CHRISTIAN SCIENCE MONITOR csmonitor.com

from the July 06, 2007 edition - http://www.csmonitor.com/2007/0706/p03s01-wogi.html

Global warming threatens alternative-oil projects

Development of oil-sand, oil-shale, and coal-to-oil projects could be slowed by a new California law.

By Daniel B. Wood | Staff writer of The Christian Science Monitor

Los Angeles

Oil-sand, oil-shale, and coal-to-oil projects – alternative fuel sources that could enhance US energy security – have always faced one hurdle. They look good only when oil prices are high. Now, they have another challenge: global warming.

California has enacted new climate-change policies that make energy companies responsible for the carbon emissions not just of their refineries but all phases of oil production, including extraction and transportation. If that notion catches on – at least two Canadian provinces have already signed on to California's plan – then the futures of oil-sand, shale, and coal-to-oil projects may look less attractive.

The reason: Extracting these alternative sources of oil requires so much energy that their "carbon footprint" may outweigh their benefits.

The issue has gained fresh currency because of the new state legislation and predictions that Congress will call for mandatory carbon controls in the next two years.

"As the US and the world move toward more controls on carbon to solve the problem of global warming, it is clear that the development of high-polluting fuels will incur a penalty and the support of and investment in such fuels will be a more and more risky business," says Roland Hwang, a senior policy analyst at the Natural Resources Defense Council (NRDC).

California's move came in January, when Gov. Arnold Schwarzenegger (R) signed a state executive order creating a new "low carbon fuel standard." The standard gives petroleum refiners 13 years to cut the carbon content of their passenger vehicle fuels by 10 percent. In May, Governor Schwarzenegger signed agreements committing Ontario and British Columbia to adhere to California's standard.

"Schwarzenegger's latest agreements with Canada are groundbreaking in creating consequences for oil producers to address climate change and help the environment," says Drew Kodjak, executive director of the International Council on Clean Transportation, an alliance of air-quality experts and regulators.

The contracts break new ground in at least two significant ways, say Mr. Kodjak and others. First, the regulations require oil companies to take responsibility not just for the carbon in the emissions from their refineries, but also from the fuels they sell into the marketplace, which are then combusted in cars. Secondly, the policies put a bright spotlight on the carbon emissions that are produced in other phases of oil production that are often overlooked – including extraction and transportation.

"Now the emphasis is on the carbon footprint left from the entire life cycle of a gallon of gas, from extraction to refining to distribution to burning," says Kodjak.

That spells trouble for the booming oil-sand industry in the Canadian province of Alberta, as energy companies warned when Ontario and British Columbia signed on to the California plan. The amount of carbon emissions produced in the steps to refine oil from oil sands would be far higher – 20 to 50 percent higher – than from oil pumped as crude to the earth's surface, Kodjak estimates.

That's because the land above the oil sands must be stripped away and the oil-saturated earth-sand mixture must be heated to extract a substance known as bitumen. The further refining of bitumen, a mixture of organic liquids, produces even more carbon.

The new standards could diminish Canada's growing role in the North American oil market, especially in the short run, analysts say. Canada has an estimated 179 billion barrels of proven reserves, second only to Saudi Arabia's 262 billion barrels. But almost all of those reserves lie in oil sands.

"The new agreement with California doesn't eliminate the promise of Alberta's vast oil-sands reserves but slows it down," says George Haley, director of the Center for International Industry Competitiveness at the University of New Haven in Connecticut. The promise might be preserved if technologies are perfected, such as the underground or undersea storage of carbon dioxide, that would trim emissions in the process. "But that will cost more and take time," he adds.

Some experts counter that Alberta's oil sands – also known as tar sands – have lost none of their promise, because there are few alternatives in the long term.

Proposals to get oil from shale rock or even coal face similar greenhouse-gas hurdles, environmental groups say. According to a just-released report by the NRDC and Western Resources Advocates (WRA) – a group active in the oil-shale issue in the American West – "tar sands, oil shale, and liquid coal all result in higher global-warming pollution emissions" with liquid coal posing "disastrous consequences" because its production creates twice as much global-warming emissions as ordinary gasoline.

"Oil-shale development is all talk and no gain," says Bob Randall, an expert with WRA. "It presents huge risks to both the economic and environmental lifeblood of this state."

Even energy-security groups, which want to reduce US dependence on imported oil from world trouble spots, are skeptical of these high-carbon energy sources.

"There is no time for false starts," says Robbie Diamond of Secure America's Future Energy.

Full HTML version of this story which may include photos, graphics, and related links