



There is some good news

Posted by [Heading Out](#) on May 24, 2005 - 6:23am

Because Peak Oil is rapidly getting to the point where its presence will hit us hard in the pocket, one of the more important things that we are trying to do is to spread the word about what the true situation is. Often, as a result, the picture we paint can appear increasingly bleak as we try and point out some of the errors in the arguments being made which say that [we have nothing to worry about](#). And this site can appear quite depressing.

So, as a partial response to [Jimbo](#) who commented on that, let us paint a little good news into the picture. The Toronto Globe and Mail is currently carrying a series of articles on Peak Oil, primarily as it relates to Canada, and today they commented on the use of carbon dioxide as a means of enhanced recovery.

This is an area that is not often talked about, but in many of the plots of peak oil, there is the curve that goes up and then switchbacks down which is main crude oil production. Sitting like a rather large boil on the shoulder of the downside of that fold is an uptick that is called enhanced oil recovery (EOR) or tertiary recovery.

One of the more promising techniques for EOR is injecting carbon dioxide into a layer of rock that still has oil, but where it cannot easily be obtained normally. There are two benefits to using CO₂. One of these is to strip some of the gas out of the atmosphere. The [University of Texas](#) recently showed that they could inject liquid CO₂ into a depleted oil reservoir, and because the reservoir was a fluid trap, it would hold the gas and keep it from getting back into the atmosphere.

But the benefits extend beyond that. An experiment that the [Globe and Mail referred to](#) has been going on in the Weyburn oil field in Saskatchewan for the last five years. CO₂ from a synthetic fuel plant in North Dakota is piped to the oilfield and injected. While the reservoir holds the gas, the mix with the oil, means that the oil flows out of the well more easily.

Carbon-dioxide injection will allow EnCana to extract another 140 million barrels of oil from its 51-year-old Weyburn field, an enormous volume at a time when the average new well drilled in Western Canada yields a mere 50,000 barrels.

The technique has promise in a number of sites where the rock layer does not otherwise allow much oil to be recovered. The potential gain for Canada can be quite large.

Now, better technology and high crude prices are about to shift an enormous amount of oil into the grasp of the industry. As many as five billion barrels could be added, according to Mr. Issacs. That would more than double Canada's conventional oil reserves.

A significant gain can also be achieved in the United States where the process has seen some limited use since it was first tried in [Scurry County Texas](#) in 1972. It is being used particularly in the Rockies and West Texas where it is currently producing over 190,000 bbl of oil .

It is also being used in [Liaohe](#), the third largest oilfield, in China, which is now declining in production. By pumping in flue gas from a nearby power plant and combining it with steam the recovery of oil from the reservoir was increased from the 20 -30% achieved with steam, to around 50 - 60%. Since the gas was not otherwise treated it only contained about 10 - 14% CO₂, the rest of the gas being largely nitrogen.

The benefits from this are two-fold, since the gas can be stripped from the oil and reinjected, thereby trapping it back underground rather than releasing it to the air. The only downside to that is that, to be economic and useful, a power plant already in existence should really be used for the gas, and it needs to be relatively near the oil to be economic.

Here is an ADDENDUM from the OGJ from back in [April](#). The article is now archived, and thus requires a password to access, but begins:

The latest technology for enhanced oil recovery by injection of carbon dioxide holds the potential to recover 43 billion bbl of oil "stranded" in six mature US producing regions, says a study conducted for the Department of Energy.

DOE's Office of Fossil Energy calls the volume, estimated in the study by Advanced Resources International, "technically recoverable potential."

It identifies as "state-of-the-art CO₂ EOR technologies" horizontal wells, 4D seismic to track injectant flow, automated field monitoring systems, and injecting larger volumes of CO₂ than were used in earlier EOR projects. The study says state-of-the-art CO₂ injection might recover 5.2 billion bbl of 22 billion bbl of oil unrecoverable by conventional production methods in California. The stranded oil is in 88 large reservoirs amenable to CO₂ injection.

The technology does require that the gas be liquified (which requires a pressure of about 1,000 psi) so that it can better mix with the oil, and make it easier to extract.

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