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FOSSIL ENERGY TECHLINE

Techlines provide updates of specific interest to the fossil fuel community. Some Techlines may be issued by the Department of Energy Office of Public Affairs as agency news announcements.

Issued on: *March 3, 2006*

New CO2 Enhanced Oil Recovery Technology Could Greatly Boost U.S. Oil Supplies

Reports See Another 89-430 Billion Barrels of Oil Through Carbon Dioxide Injection, Other Advances

Washington, DC – State-of-the-art enhanced oil recovery with carbon dioxide, now recognized as a potential way of dealing with greenhouse gas emissions, could add 89 billion barrels to the recoverable oil resources of the United States, the Department of Energy has determined. Current U.S. proved reserves are 21.9 billion barrels.

The 89-billion-barrel jump in resources was one of a number of possible increases identified in a series of assessments done for the Department which also found that, in the longer term, multiple advances in technology and widespread sequestration of industrial carbon dioxide could eventually add as much as 430 billion new barrels to the technically recoverable resource.

Beginning efforts to develop the 89-billion-barrel addition to resources would depend on the availability of commercial CO₂ in large volumes. If this oil could be added to the category of proven reserves, the U.S. would have the fifth largest oil reserves in the world behind Iraq, which has 115 billion barrels, based on present estimates; and an additional 430 billion barrels would make it first, ahead of Saudi Arabia with 261 billion barrels. The capture of CO₂ from combustion in power generation and other industrial uses is the subject of other research and development programs sponsored by the Office of Fossil Energy.

Next-generation enhanced recovery with carbon dioxide was judged to be a "game-changer" in oil production, one capable of doubling recovery efficiency. And geologic sequestration of industrial carbon dioxide in declining oil fields was endorsed last year as a potential method of reducing greenhouse base emissions by the Intergovernmental Panel on Climate Change.

Done in compliance with the National Energy Policy Act of 2005 and other Congressional directives, the assessments looked at maximizing oil production and accelerating the productive use of carbon dioxide in all categories of petroleum resources, including as-yet undiscovered oil and the new resources in the residual oil zone. The findings are consolidated in the February 2006 report *Undeveloped Domestic Oil Resources: The Foundation for Increasing Oil Production and a Viable Domestic Oil Industry*.

The 430 billion barrel potential was identified in increments of up to 110 billion barrels from applying today's state-of-the-art enhanced recovery in discovered fields – 90 billion in light oil, 20 billion in heavy oil; up to 179 billion barrels from undiscovered oil – 119 billion from conventional technology, 60 billion from enhanced recovery; up to 111 billion barrels from reserve growth – 71 billion from conventional technology, 40 billion from enhanced recovery; up to 20 billion from tapping the residual oil zone with enhanced recovery; and, another 10 billion from tar sands.

The separate assessments and reports contributing to the total resource estimate are: *Basin Oriented Assessments*, ten assessments of producing U.S. basins and the potential of state-of-the-art enhanced oil recovery; *Stranded Oil in the Residual Oil Zone*, five reports looking at new resources in the residual oil zone; and, *Evaluation of the Potential for "Game-Changer" Improvements in Oil Recovery Efficiency for CO₂ Enhanced Oil Recovery*, a report on next-generation technology. They were prepared by Advanced Resources International and Melzer Consulting.

- End of *Techline* -

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