

# EHR NEWS ROOM

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## EHR to Capitalize on Chinese Opportunities

Significant opportunities exist for CO<sub>2</sub> Enhanced Oil Recovery (EOR), CO<sub>2</sub> capture and CO<sub>2</sub> storage in China. Currently, China needs to import at least 50% of its crude oil to meet the consumption demand every year. As the conventional oil reserves and production are steadily declining, numerous efforts have been made to improve oil recovery with various tertiary recovery or CO<sub>2</sub> enhanced oil recovery techniques. The extensively used chemical flooding methods have found their limits once the accessible remaining oil is swept out.

According to a partial evaluation of 56 billion barrels of conventional reserves, over 9 billion barrels of oil is found to be recoverable by using CO<sub>2</sub> EOR techniques. In addition, about 22 billion barrels of oil reserves in reservoirs with low or ultra-low permeability are promising for CO<sub>2</sub> injection, compared to waterflooding. CO<sub>2</sub> EOR has not been extensively applied in China mainly due to lack of sufficient and affordable CO<sub>2</sub> sources.

The carbon mitigation target pledged by China in Copenhagen in December 2009, would cut its carbon intensity (i.e., the measure of carbon dioxide emissions per unit of GDP) by 40-45% compared to 2005 levels. This will drive CO<sub>2</sub> EOR business to a new era once the first pilot tests including Jilin Oilfield CO<sub>2</sub> projects, prove to be successful.

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EHR is currently under contract with the Research Institute of Petroleum Exploration and Development (RIPED), China National Petroleum Corporation to provide reservoir engineering services for the “Experimental Determination and Mathematical Characterization of the Crude Oil-CO<sub>2</sub> System under Reservoir Conditions”. This work will provide important phase behaviour data to facilitate reservoir simulation and determine subsequent field development scheme in the Jilin Oilfield. EHR has been working with RIPED since 2007, and has participated in a variety of reservoir simulation projects, including the H Fault Block CO<sub>2</sub> project in the Jilin Oilfield.

In addition to working with CNPC, EHR has been working with SINOPEC Corp. to supply reservoir engineering services for their Jilin CO<sub>2</sub> EOR project; and also with YanChang Petroleum Group. Similar to the Jilin formation owned by SINOPEC, YanChang has large tight oil formations where CO<sub>2</sub> flooding is favourable for improving oil recovery, compared to the traditional waterflooding. Due to lack of the natural CO<sub>2</sub> source, EHR is working to integrate the Pureenergy CCS 1000® modular carbon capture unit into the CO<sub>2</sub> EOR business.

“EHR, along with their CO<sub>2</sub> management and technology provider HTC Pureenergy have been active in the Chinese market for a number of years now” said Graeme Lynch, CEO of EHR Enhanced Hydrocarbon Recovery. We have significant knowledge and technical expertise in CO<sub>2</sub> and polymer EOR, as well as demonstrated experience in large scale, high performance CCS technologies and project integration.

EHR will continue to partner with China to appraise, apply and manage implementation of full scale secondary and tertiary EOR projects.”

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