

## ENERGY

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Energy experts and executives have a monumental challenge to formulate business plans and budgets when considering the proper balance between (1) exploration for and exploitation of remaining fossil fuel reserves (2) investment in alternative energy sources (3) clean coal technology and support of its use in producing electricity (4) effect of pending legislation to create a cap and trade system that aims to lower greenhouse gas emissions by setting steadily decreasing limits and requiring companies to obtain permits which would be traded on a new market (5) stay abreast of developing technology in exploring and developing fossil fuels as well as other sources of energy (6) monitor global reserves, development and price scenario.

## I. Global Production and Demand for Oil & Gas

The slump in global oil demand in 2009 will be less severe than previously forecast and consumption will increase next year as the world economy stabilizes. According to the International Energy Agency in September 2009 crude oil demand will reach 84.4 million barrels per day, down 2.2 per cent from 2008 levels but better than 2.7 percent decline the agency forecast previously.

In September 2009, OPEC Ministers met and announced the group wouldn't change its output, the third time this year it has kept production steady. Saudi Arabia, OPEC's top crude producer, plans to keep output at eight million barrels per day and will invest in increasing its capacity. Saudi Oil Minister, Ali Naimi expressed interest in diversifying its resources into alternative industries such as solar power but has continued to invest in fossil fuel.

## II. Oil and Gas Pricing

Prices for oil and gas are still unpredictable although more stable than this in previous quarters. OPEC was confronted with some members exceeding their production quotas which did not help the glut in global oil inventory. Oil prices in the range of \$65.00 to \$80.00 per barrel are up in excess of 5% this year compared to the records of \$147.00 per barrel last year. Natural gas futures have plunged recently to a 7 year low but October delivery rose 22 cents to \$2.728 per million BTU. In the opinion of IPG Energy Committee Members, the glut of natural gas on the North American Continent will not disappear for several years because of the shale gas plays and enormous new reserves world wide. OPEC is concentrating on quota compliances while keeping current production unchanged. This year they announced a record 4.2 million barrel per day production cut from 2008 levels. "Everything is in good shape" said Saudi Oil Minister.

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Natural Gas prices have plunged more than 75% from last summer's highs due to the fact that supplies continue to exceed demand. Gas in storage has increased 17% since last year, decrease in industries demand, and improving technology in the new gas plays have collectively had an adverse effect on natural gas pricing.

### **III. Current Activity – 2009**

#### **Gulf of Mexico**

BP-PLC has reported a giant oil discovery 200 miles south of Lake Charles, LA. The field is estimated to contain three billion barrels of oil. This discovery is the Tiber well which is under 20,000 feet of water with total depth of 35,055 feet and is one of the deepest wells in history. Other discoveries have generated new interest in the deep lower tertiary formation. Well cost is \$100 million with platform cost of \$1 billion and another \$50 million to bring the oil to surface. Development of the field may take years to complete because of the technical challenges and costs associated with extracting oil from ultra - deep water.

#### **West Africa**

Anadarko Petroleum Corporation group has reportedly discovered oil in the deep waters off the coast of Sierra Leone. An analyst of oil consultant Wood Mackenzie reports that this discovery is very significant because there have been absolutely no discoveries in the basin before. This is definitely a large new frontier with many prospects already identified which could ultimately produce billions of barrels of oil.

#### **US - Canada Oil Pipeline**

The U.S. State Department has issued a permit allowing construction of a pipeline that will bring crude oil to the U.S. from Canada's oil sands. This is a very toxic type of oil and environmentalists say that the oil sands production creates more greenhouse gases than other sources because of the intensive refining process before use. Extraction reportedly leaves behind toxic residue and damaged lands.

### **IV. Outstanding Exploration and Production Deals**

- Occidental Petroleum Corp. has discovered oil and natural gas in a Kern County field that may represent their biggest find in more than 35 years. The nation's fourth biggest oil company says that it had found the equivalent of 150 million to 250 million barrels of oil, adding that two thirds of the new source is believed to be natural gas.
- The Williston Basin's amazing Bakken play continues to grow. Developments to date as impressive as they are, seem to be just the beginning. The Bakken shale formation is estimated to contain between 200 million and 400 million barrels of oil in place.
- Exxon Mobil made a gas deal of \$41 billion with China. The LNG supplied Petro-China comes from Exxon's 25% share of the huge Gorgon gas field offshore Australia. Exxon is scheduled to start up another three LNG projects in Qatar this year. They will produce more than three billion cubic feet of natural gas per day and freeze it for transportation. Europe, Asia and U.S. markets are oversupplied.

- Exxon Mobil has been scouring the earth for natural gas locked inside Shale formations. Reports indicate that they have a huge find in the Horn River Basin in Northern British Columbia. Results from the first four wells indicate that each well will produce between 16 million and 18 million cubic feet per day.
- Petrohawk Energy Corp. reported sale of Permian Basin properties to an unnamed privately owned company for \$376 million. The company estimated the proved reserves of 177 billion cubic feet equivalent for these assets
- Baker Hughes \$5.5 billion bid for B J Services is a bet on rebound of natural gas prices and also a move for Baker Hughes to compete with Halliburton and Schlumberger. Natural gas prices have dropped in the past year, with closings in September 2009 at \$2.82 per million BTUs.

## V. Alternative Fuels

### Heavy Oil and Gas Sands

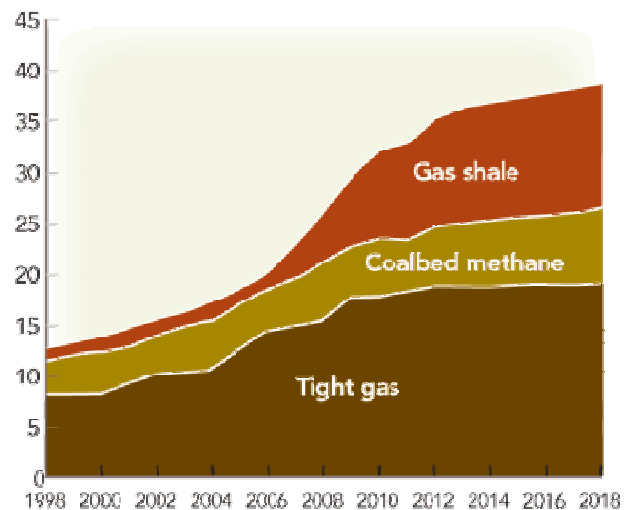
An important development related to heavy oil the past year was the increase in heavy oil prices. The heavy oil director for Schlumberger said "That has increased the optimism around the world for heavy oil and reaffirms Schlumberger's commitment to investment in heavy oil recovery technology" In situ heavy oil production technology, steam assisted gravity drainage, cyclic steam stimulation, combustion and others have continued advancement to achieve optimum recovery.

### Clean Coal Technology

C. D. McConnel, Chairman of Clean Coal Technology Foundation of Texas reports that "Coal-based Technology is affordable, reliable and has become considerably friendlier to the environment over the recent past." In the US more than half of our electricity comes from coal, John Thompson, Director of the Coal Transition Project of the Clean Air Task Force has recently stated that "We need new advanced coal plants that capture carbon dioxide, compress it into a liquid like state and inject it in deep underground." This is referred to as carbon sequestration.

In Texas the oil and gas industry has been injecting carbon dioxide below ground for decades as part of enhanced oil recovery.

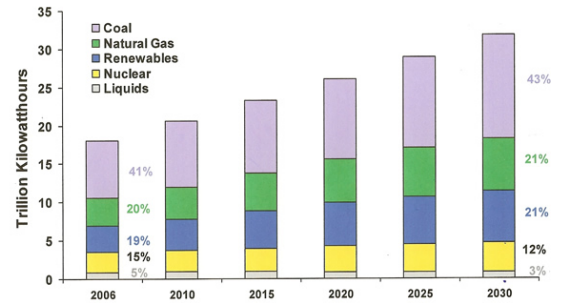
Now is the time to develop the clean coal technology. The barriers are political and technical. Industry, environmentalists and government must find ways to work together on coal and climate. This is true in foreign countries as well as our country. The encouraging news is that Greenhouse Gases and Clean Coal Conferences are currently scheduled all over the world.



US unconventional gas production capacity (bcfd)

Source: US DOE 2008

Now, the other side of the picture ---Charles W. Stenholm, Washington analyst reports the latest numbers relating to U.S. Demand and future apportionment "In 2030 our total demand for energy will be met as follows: 33.5 % by oil, 21.8% by natural gas, 22.9% by coal, 8.4% by nuclear, 2.7 by hydrogen, 10.7% by biomass and other renewables." "The United States cannot unilaterally solve the global warming/climate change." Hopefully, the House passed cap and trade bill will not pass the Senate. Stenholm further states "The United Nations reports that 20 percent of greenhouse gases come from deforestation of trees cut and burned by humans, mowed down by forest fires or rotted away by insects and disease. This is more CO2 emissions than comes from all the world's cars, trucks, planes, trains and ships combined." This illustrates the great challenge before us.



Renewables are fastest growing electricity generation source, but coal and natural gas still fuel nearly two-thirds of world electric generation in 2030

Reference: EIA International Energy Outlook 2009 Presentation - May 27, 2009

## VI. Recent M&A Deals in Oilfield Equipment and Services

- ABERDEEN, Oct 1 / A subsidiary of international energy services company John Wood Group PLC ("Wood Group") has acquired the energy services business (Baker Energy) of Michael Baker Corporation (NYSE Amex: BKR). The consideration was US\$37.9 million, settled in cash at closing. Baker Energy provides a broad range of operations and maintenance services to a large number of oil and gas operators, both onshore and offshore. Baker Energy had revenues in the year ended 31 December, 2008 of US\$243.5 million and currently employs around 2,400 people. Baker Energy will operate within Wood Group's Engineering & Production Facilities division.
- ABERDEEN, Sept. 16 / Prodrill Engineering Ltd (Prodrill) announces today it has completed a buy-out from Sovereign Oilfield Group plc (Sovereign) for £2.25million, and will now trade under the new name of Prodrill Energy Resource Solutions. The specialist international drilling consultancy is now under the ownership of two of its current directors. Prodrill serves customers in over 15 countries worldwide.

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- HOUSTON, September 15 / Boots & Coots, Inc. (NYSE: WEL), today announced it has entered into an agreement to purchase Halliburton Company's (NYSE: HAL) external abrasive jet cutting systems. The abrasive jet cutting system was developed by Halliburton in 1991 to assist firefighting crews in Kuwait battle more than seven hundred fires left after the Iraq invasion. The external abrasive jet cutter is designed to be easily positioned on a burning well; the system utilizes sand and water to abrade the wellhead or surface equipment thus allowing the well to flow in a vertical direction, making it possible to extinguish the fire with water. Once the fire is out the well can then be capped.
  - HOUSTON, Sept. 3 / Key Energy Services, Inc. (NYSE: KEG) announced today that it has consummated the second tranche of its investment in Russian oilfield services company OOO GeoStream Services Group effective September 1, 2009. Following its initial investment of \$17.6 million in October of 2008, Key made an additional capital infusion of approximately \$16.2 million, increasing its ownership interest in GeoStream from 26% to 50%. GeoStream has agreed to purchase from Key a customized suite of equipment for approximately \$23.0 million in total, a portion of which will be seller financed.
  - HOUSTON, Aug 31 / Baker Hughes Incorporated (NYSE: BHI) and BJ Services Company (NYSE: BJS) today announced that their Boards of Directors have approved a definitive merger agreement, which represents a transaction value of \$5.5 billion for BJ Services based on closing stock prices on August 28, 2009. BJ Services stockholders collectively will own approximately 27.5% of Baker Hughes' outstanding shares. Baker Hughes hopes to strengthen its position and to drive international growth by integrating pressure pumping with Baker Hughes' wide range of products and services.



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