

Stelmach finally did make up his mind on Royalties. For our industry the 5 weeks of indecision was the worst part. Once a decision was announced companies started to release programs and bids. As some of the seismic channel content has moved south to the US during the periods of uncertainty many of the seismic crews are now booking up for the winter. We often have said that our industry does not get the great up tick that other service and supply sectors of our industry gets but we do not see as great of a downturn as other sectors. A number of the other sectors have projected doom and gloom for 2008. Our take on it is not as dramatic. Other things being equal we would suggest the rise of the Canadian dollar continues to be our greatest risk for 2008. If it continues to climb it has the double whammy on Canadian Oil Companies with CDN costs and USD revenues.

As Oil charges to the \$100 USD mark and natural gas fell off in 2007 we have experienced the inevitable bust trough associated with the lower commodity price for natural gas. There is no doubt it will turn in time. Natural Gas remains the most efficient and economical priced energy unit. It is largely subjected to continental movement by pipeline and therefore is a more insular market (North American rather than global). There is no doubt that political masters will turn their sights towards moving energy consumption away from oil towards a greater dependence upon natural gas. We are seeing this due to climate change in areas such as coal generation of electricity albeit slowly. Renewables still face tremendous infrastructure and efficiency challenges. They have made very little indent into the 85 % of world energy needs provided by coal, oil and natural gas.

In 1957, M. King Hubbard, a geophysicist working for Shell Oil, devised a way to estimate production and production increments based on extractable quantities (of oil). This graph, known as Hubbard's curve, looks roughly like a bell curve and plots the current and future annual extraction of oil over time. The curve's maximum occurs when half of the world's oil is consumed. This maximum is known as "the peak," so in this case peak oil is simply the point in time when the maximum annual oil extraction is reached. Hubbard predicted a U.S. peak about 1970. He was ridiculed during the 1960s while the US's domestic oil production increased, but his reputation was resurrected in the early 1970s when it became apparent that US domestic oil production had peaked sometime between 1970 and 1972. The rates of discovery of new sources of oil in the U.S. peaked in the 1930s, and the rates of world-wide discovery peaked in the 1960s. Given this 40-year spread between discovery and production peaks, the worldwide proven reserves, the quantities of oil already extracted and our annual rates of extraction, it's not unreasonable to assume that we are currently near or at the worldwide oil peak. Most experts seem to agree that the earth had oil reserves of between 2.1 and 2.2 trillion barrels prior to our extractions, which began in the mid 1800s. A barrel is 42 gallons. Based on records of aggregate consumption, we've used about 1.0 to 1.1 trillion barrels. This means that if both the 1.0 and 2.1 trillion figures are correct, we've used approximately half of what the earth has to offer.

The only reliable way to identify the timing of peak oil will be in retrospect. M. King Hubbert, who devised the peak theory, predicted in 1974 that peak oil would occur in 1995 at 12 gigabarrels per year "if current trends continue". However, in the

late 1970s and early 1980s, global oil consumption actually dropped (due to the shift to energy-efficient cars, the shift to electricity and natural gas for heating, etc.), then rebounded to a lower level of growth in the mid 1980s. The shift to reduced consumption in these areas meant that the projection assumptions were not realized and, hence, oil production did not peak in 1995, and has climbed to more than double the rate initially projected.

Worldwide oil production has surpassed annual discoveries since 1980. Production capacity in effect dictates supply. In contrast to this position, the International Energy Agency (IEA) predicts that production will go up in response to demand. However, the Energy Watch Group (EWG) report points out that during the energy crisis of the 1970's, oil production did not increase in response to sky-rocketing demand. Therefore, peak production capacity is the main bottle-neck to any supply/demand equation.

The demand side of Peak Oil is concerned with the consumption of oil measured as the quantity consumed over time. World crude oil demand has been growing at an annualized compound rate around 2 percent in recent years. Demand growth is highest in the developing world, particularly in the People's Republic of China and India, and to a lesser extent in Africa and South America. Where high demand growth exists it is primarily due to rapidly rising consumer demand for transportation via vehicles powered with internal combustion engines.

The U.S. Department of Energy categorizes national energy use in four broad sectors: transportation, residential, commercial, and industrial. In the United States, in contrast to other regions of the world, about 2/3 of all oil use is for transportation, 1/5 goes to industrial uses, and the remainder goes to residential, commercial and electric energy production.

Some suggest the peak came in 2005. Others suggest it is upon us now in late 2007. Those more optimistic push it out from 2010 to 2015 and beyond. It can only be seen in the rearview mirror as reserves are difficult to believe in all cases due to political influences (80 to 90% of world oil is controlled by National Oil Companies). Also other factors have complex influences. But nonetheless the age of cheap oil is over and this should push the market to begin to seriously look for other energy solutions. **R**

From the Thursday Files:

It turns out that societies often fail even to attempt to solve a problem once it has been perceived.

– Jarod Diamond from his book *Collapse*

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