



Price of Natural Gas

By CK Wong 2006.03.25

<http://www.ck-wong.ca/Energy/price%20of%20natural%20gas%2020060325.pdf>

Introduction

Natural gas is one of the most versatile energy sources. It is used for home heating in the North America. It is also the most portable fuel used for traveling at the RV and the camp. Nobody is hauling the coal or charcoal anymore. One of the major applications is actually electricity generator. Since clean coal generator is not generally deployed, natural gas is the source until the coal can be burned efficiently. With the development of the oil sand in Alberta, Canada, natural gas demand has been pushed further to compete with other natural gas (NG is the term used by the industry) market. What will be its effect of the price? This article looks at the supply and demand trend and reviews the potential price direction.

Sources

Natural gas can be found at oil fields, coal bed and isolated natural gas sources. It is not evenly distributed. The most concentration areas are at Middle East, Canada, Russia, United States, North Sea of the UK. Other small pockets of gas field exist around the world. Some have none; Japan, Italy. The gas is delivered using direct or indirect method. Direct method refers to the use of pipelines. In America, there are multiple pipeline systems that connecting Alaska, Canada's Alberta and Nova Scotia to the lower 48 States. To ship across the ocean, Saudi Arabia ships out the oil by product as Liquid Natural Gas (LNG) to US and China.

Other than the natural sources, NG can be synthetic using heated coal and water at high temperature. This method is always debated because the energy used to create NG is arguably higher than the energy burning the fuel. In a total solution perspective, synthetic NG is a special solution to situations. It is not necessary to be general economical until the energy to do the synthesis is geothermal, solar or tidal. In such way, we are storing the energy from one form to another so that it could become storable and transportable.

Sink

Where there is source, there is a sink to maintain the flow. There are different types of sink country and consumption. The Russian has been supplying the NG to Europe through pipeline because of its short distance. It also delivers NG to China through vehicle. Pipeline is building. Japan is still negotiation to enjoy the Russian NG. Middle East has been generously exporting LNG to the American and lately China has been added to its customer list. Canada has been a faithful customer of its own and a reliable supplier to American.

In the Communist age, the Communist countries (East and West) had developed the technology to use waste to create methane and enjoy a certain success. It has never been a

great success but it supplemented the energy source at the farm and rural areas where energy supply was always a premium. The scale was small and locale. In North America there were also projects to collect the methane generated from garbage dump as energy source rather than letting it escapes to the atmosphere to increase the green house effect. Again the success is very localized. There is not national wide project because the cost of NG is still much cheaper than the effort to collect there artificial NG. When the supply is lower and the price is higher, the motivation will be observed.

In Europe and North America, the usage of NG is highly diversified: ranging from home heating to steel manufacturing and electricity generation. The demand is high and the consumption is also high. One third of the consumption is used for electricity generation.

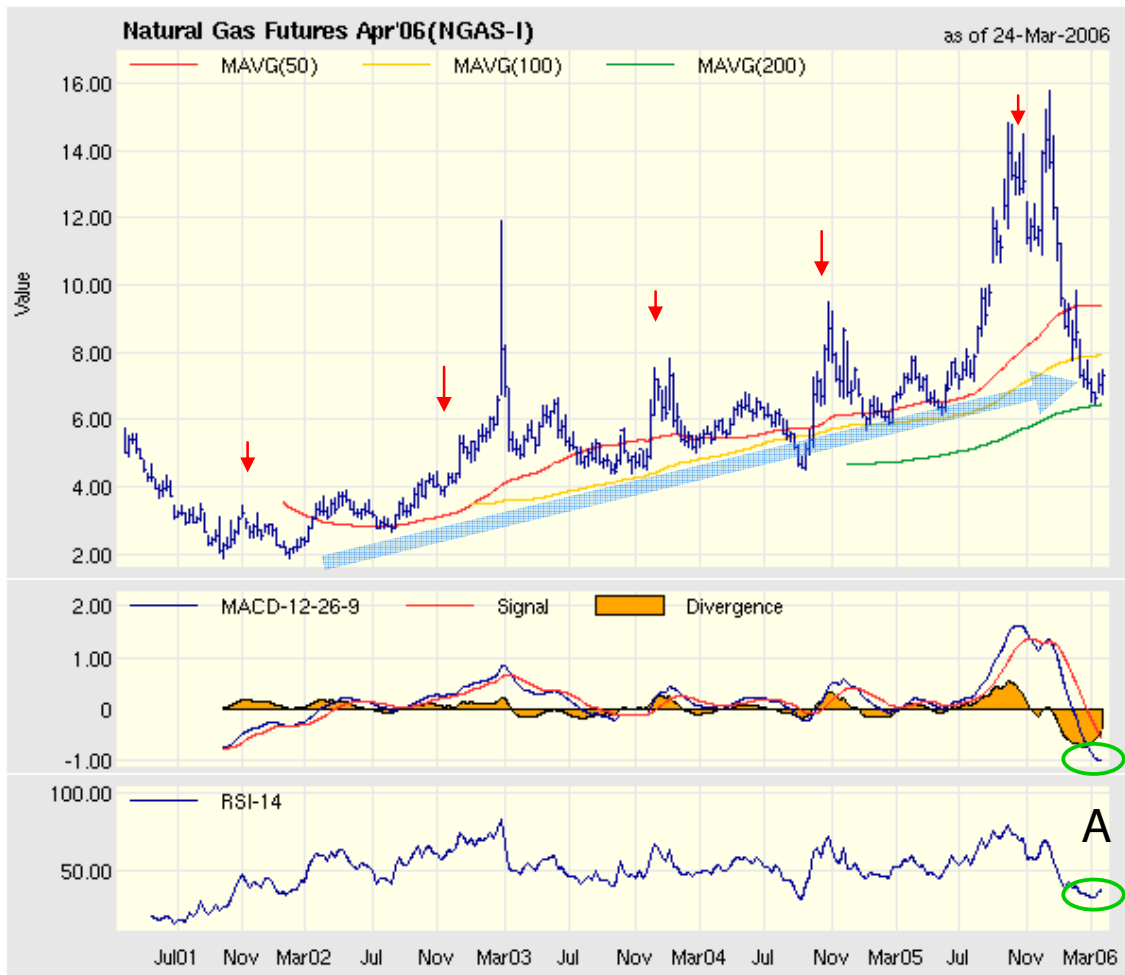
Competition

As the decline of the oil production, the oil sand project is booming. The oil sand is just like the name inferred. Oil is mixed with the sand as a mixture called bitumen. There are two approaches to get the oil. If the oil sand could be harvested through open pit, the sand is heated at the upgrader to create the synthetic crude. If the bitumen is underground, natural gas is used to heat the bitumen to release the oil which has its viscosity reduced by heat so that it could be pumped to the surface. By mixing the oil with diluents, it could be pipelined to trucked to the upgrader to create the synthetic crude.

There operations are energy intense operations. For the meantime, the Alberta synthetic production is about half a million barrel per day. When the target moves to 2-3 million barrel per day, the oil sand production becomes a major consumer of the NG in the Alberta. Until additional source could be found, the American customers may have to be on NG diet.

Price Trend

Everyone in North America has been feeling the heat of their home heating billing because the NG has been gone up 3 times in last decade. The following is the NG price at the commodity exchange:



Complement of Globeinvestor

From this chart, we see a clear trend to move up starting 2002 when the price was at \$2 up the move recent \$6.5. The trend is firm and steady.

It is also equally important to observe the spiking of the price around November of every year for 3 to 4 months. When everyone was commenting the \$15 means the peak of the NG price and it is gone. They do not accept the annual cycle of this commodity which could spike up due to the weather, hurricane and economic situation. They also ignore the March low cycle. While the \$15 spike was special but it is not unique. In winter of 2002, the gas price rose from the low of \$3 to \$12, a difference of 9 dollars. Comparing the spike of last year, it rose from low of \$6 to \$15, a coincidence of \$9.

The high NG price is here to stay. The two studies at the bottom indicates a beginning rise trend again after the March low cycle.

