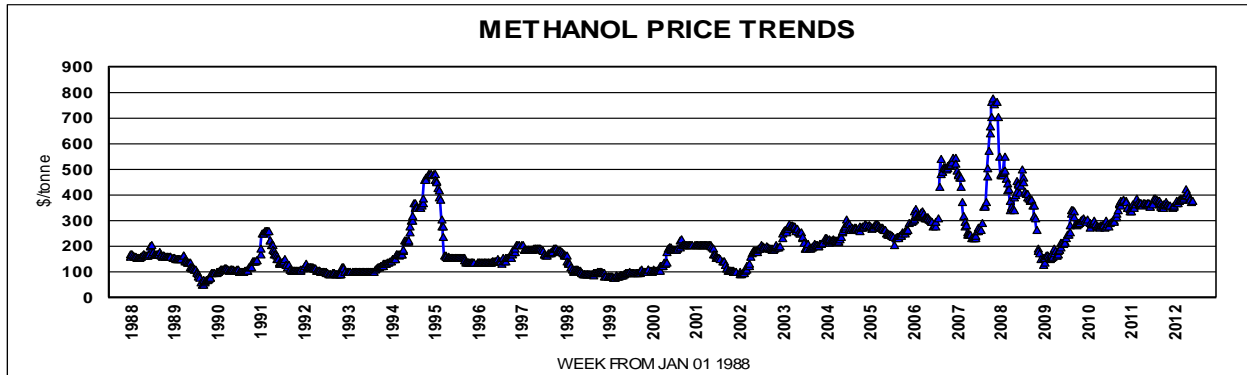


C7: THE PRICE OF METHANOL

Most methanol traded outside of China is produced from natural gas in large facilities with outputs over 2000t/d. Some recent operations, often referred to as Mega-Methanol¹, have capacities in excess of 5000t/d. Here is a simple analysis of traded prices based on the published spot prices as reported by *European Chemical News* and *ICIS Chemical Business* from 1989 to 2012.



The historical chart clearly illustrates the business cycle nature of the market. The low points in the cycle are about \$100/t and this level has persisted in the past for several years, though not in recent times. At times of shortage, the price can escalate rapidly to \$500/t or more. Since 2002, there has been a general rise in the base price from about \$200/t to the 2012 value of about \$350/t.

With a price of \$100/t this equates to methanol at \$4.4/GJ. Methanol facilities (greenfield process plant operations) generally operate at overall thermal efficiencies of about 60% so for profitability at the times of low price, the gas price has to be well below \$2/GJ. This eliminates most regions so that export plants in the years prior to 2002 where established in countries with large uncommitted gas reserves available at a low price such as the Middle East, Trinidad and Chile. High gas prices in other regions forced the closure of operations.

Since 2002, there has been a general rise in commodity prices spurred by the growth in the Chinese economy. However, for the most part, this has not helped methanol because of the rise in demand for LNG, especially in the Far East, has sequestered much of the available gas and placed a very high net-back value on gas reserves which make new methanol facilities uneconomic.

In China there are many methanol plants using coal as feedstock. Many of these have relatively small capacities (<500t/d) but more recent plants have larger, worldscale capacities (>2000t/d). The large production in methanol in China sees it used as a gasoline blend component (rare outside China) and for the production of DME which is used as an LPG substitute. There are plans to greatly increase production of methanol as an intermediate for the production of chemicals (particularly olefins). This enormous increase in the production of methanol could see substantial volumes coming onto the market in the coming years. This will lead to depressed methanol prices. However, should the demand for downstream products in China continue at its present level then continued high prices will persist giving opportunity for new gas based methanol plants.

¹ Note MegaMethanol is a registered trade mark of Lurgi GmbH