

The State of the Uranium Market in Context

November 2008

No Escaping the Financial Grief of Today's Markets

Consideration of the market for uranium today must begin with the implications of the turmoil in global markets. Nothing is escaping the meltdown of capital markets and the extraordinary destruction of confidence that began with misleading financial practices in Wall Street. We are not just experiencing a bear market in stocks and shares, but a breakdown of capital markets. This is appearing as credit restrictions and record high inter-bank lending rates.

We are also seeing a massive deleveraging exercise with hedge funds in particular being forced to close out of highly geared positions in every asset class. This has caused a cascading of commodity and metal prices, with uranium not being immune to the sell off. It is a drive for liquidity at any cost. While the "suits" are butchering markets the real world of industry is being tossed around like a cork in the ocean.

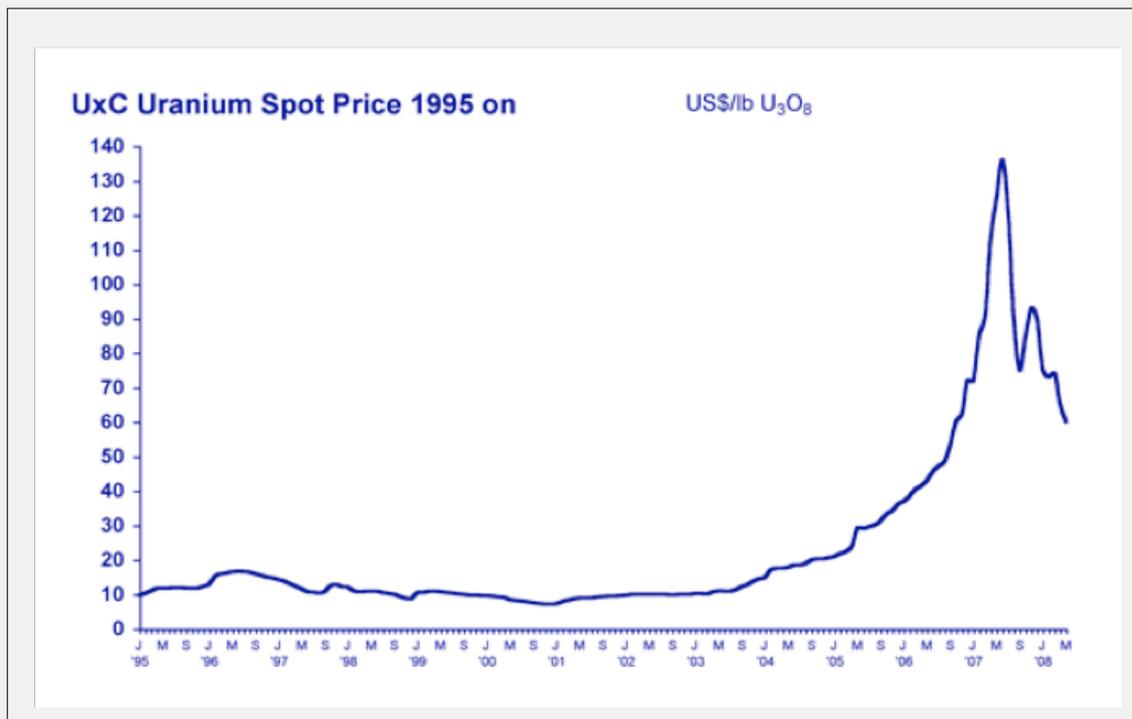
By the time you get to read this article it may be that political initiatives have managed to stem the rising tide of fear and we are just going through the pain that accompanies recessions, or the situation will be much more dire.

Winding the Clock Back a Few Years and Consider the Hedge Funds

It was only four years ago that no-one was focusing on uranium. The uranium oxide price was still in the order of US\$15/lb and there was not much excitement. Then the global warming debate started to gather momentum, at the same time that the rising dragon in China really started to show aggressive demand. In traditional markets of supply and demand this would have led to a rising uranium price. That rise would have prompted a supply response and new mines all within an industry acceptable timeframe.

However, enter the power of the demonic hedge funds. They quickly latched onto the appreciation that the values and volumes of commodities traded were not that large when compared to the financial muscle they could muster when their aggressive gearing factors were considered. Their arrival on the scene quickly overruled supply and demand economics, converting the role of the speculator from the risk taker at the margin to the primary driver of the market, frequently accounting for 50-60% of daily turnover. All commodities ran in price, particularly those that the Chinese wanted. It was a classic case of speculators "front-running" the Chinese orders.

Now, it is not necessarily a bad thing for speculators to play a bigger role and drive markets faster and higher, departing the commodity after it has risen to the appropriate level to achieve the supply response that industry needs, but in this case it was done with hot money – highly geared money. The winding back of the funding by banks has hurt these hedge funds badly, causing them to dump assets left, right and centre. This has crunched uranium back from unrealistic highs of almost US\$140/lb to US\$44/lb at the time of writing.



Source: World Nuclear Organisation

So Where are we on the Supply and Demand Curves? Supply First

There has not been a great deal of change in the supply and demand equation from 12 months ago; there is still a serious problem with global warming and greenhouse gases that threaten our climate, and nuclear power is still the only long-term viable solution to this issue. The bubble in uranium equities on stock markets in Canada and Australia has burst along with the collapse of the uranium price, and both of these developments have strangled any meaningful supply response in the short term. The only significant sources of supply increase have been Paladin's Langer Heinrich mine in Namibia, which is now operating at 2.6 mill. lbs (1,200 tpa U₃O₈) p.a., and continuing expansions in Kazakhstan, though this has been slower than forecast for a number of reasons, including shortages of sulphuric acid. Significantly, the problems at Cigar Lake seem to be for evermore.

Fifteen months ago, with record uranium prices, there threatened to be a flood of new mines as prices greater than US\$120/lb would have made even 200-300 ppm U₃O₈ mines economic in many cases. However, with the price just hitting US\$44/lb at the time of writing, uranium is one of the most down-and-out sectors today. There is a popular view that this price is too low to encourage development of new mines with industry sources saying that there needs to be a long term sustainable price of at least US\$40-60/lb.

In spite of this Paladin is on target to commission its Kayelekera mine in 2009, in Malawi, at the rate of 2.8 mill. lb U₃O₈ (1,300 t) pa. Established producers are looking at ways to expand production in the near term. As an example the world's second largest uranium mine operated by ERA Ltd, Ranger, is bringing on stream an 880,000 lb U₃O₈ (400 t) p.a. laterite treatment plant and it is well advanced with testing for a 1.1-1.3 mill. lb U₃O₈ (500-600 t) p.a. heap leaching operating of its 50 million tonne stockpile of low grade, 800 ppm material.

South Australia is a good example of where there is a resurgence in production. The wonderful rich Beverley Four Mile project is due to achieve commercial production of 2.8 mill. lb (1,300 t) p.a. of U₃O₈ from an ISL operation in South Australia, commencing January 2010. This is one of the most promising discoveries in the last 20 years. The ability to piggyback onto the infrastructure at the Beverley Mine, only a few kilometres away, will make this one of the most profitable mines in the world. Not so with the Honeymoon Mine though, also in South Australia. That mine is scheduled to produce at 880,000 lb p.a.

U3O8 (400 t) p.a. commencing in 2009. Industry experts have reservations about the leaching kinetics and recovery rates due to a heavily oxidising geological environment. Further out it has been expected that Olympic Dam will boost production from 4,500 tpa to 10,000 and then eventually 15,000 tpa, but the enormous engineering feat, the shortage of labour and the high cost is pushing the time frame out further and further, and moderating expectations.

There are new mines planned elsewhere in the world, including Niger, where Chinese interests are looking to bring on stream 600-700 tpa U3O8 in the near term. All up, we could see uranium production in the order of 50,000 tpa U3O8 within a year or two, but we will be waiting longer for any major boost to mine supply.

Demand Continues to Exceed Mine Supply by a Significant Margin

On all estimates the demand for uranium is significantly higher than the mine supply, for an extended period. A critical shortage has been forecast for the stopgap sources of conversion of weapons grade product to power station quality and from the running down of stockpiles which will be exhausted over the next few years. There is no obvious and assured mine supply to make up for this shortfall yet. With uranium prices having fallen to current levels, no-one seems to be in hurry to step up to the plate.

According to the World Nuclear Organisation, 78,500 t U3O8 will be required to extract the 66,500 t of uranium feed for the 439 operating nuclear power plants. Each GWe of increased capacity will require 195 tpa of uranium annually, and three times this for the first fuel load.

What is the Upside for Nuclear Power?

Sentiment in uranium stocks, and the spot market for uranium, is out of alignment with the long-term outlook for nuclear power. Every week we are seeing strong statements of commitment to expanded nuclear power from all around the world. The case for investment in the sector is becoming increasingly more compelling.

The UK Government is advocating new nuclear power plants. UK's Business and Enterprise Minister has said that the construction of new nuclear power plants "could position the UK as the gateway to a new nuclear renaissance across Europe" when he spoke at a conference in the UK in March. Replacement of existing capacity is estimated to cost \$40bn, and its expansion will involve a lot more. This is overwhelming evidence that the uranium sector is in for good times ahead.

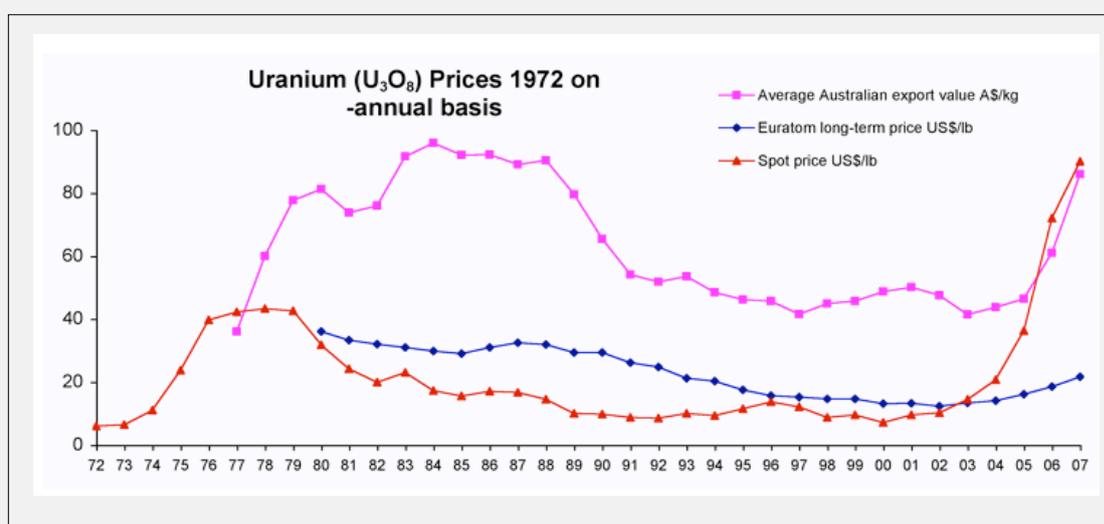
During 2007, four new reactors were added to the grids, adding 2,922 MWe of capacity. Construction commenced on another 10, making a total of 34 now under construction. Another 29 were added to the planned category and 64 to the proposed category. On the basis that each of these will need 500 t U3O8 to start up, and 200 tpa U3O8 thereafter, they will consume 20,600 tpa U3O8 annually (as well as the 30,900 t start-up boost). Annual mine production is currently in the order of 45,000 tpa U3O8. Hence, the industry needs many more mines.

Carbon taxes will boost nuclear demand. Consider the impact of the carbon taxes that are being proposed. If we are to stabilise CO2 emissions at 550 parts per million by 2100, how are we going to increase world electricity generation by the 500% level the economists are saying will be needed to sustain economic growth? The Joint Global Change Research Institute announced at a conference in Miami earlier this year that the number of nuclear power reactors will need to rise from the current level of approximately 440 to 6,000 by 2100; that is a 1,260% increase. Uranium demand will increase from approximately 75,000 tpa to about 1 mill. tpa. Think through the implications. It represents a stunning opportunity for investors and industry. The 20th century owes its growth to oil. The 21st is going to rely on nuclear power as the new long-term source of energy. Nuclear currently supplies about 16% of world electricity needs. This proportion would increase to 33% under the above scenario.

What is the Real Price; Spot or Long Term Contract?

There seems to be some confusion about what the real uranium price is; the spot or the long-term price. Certainly it is the spot price that motivates share market investors. It is the spot price that causes buying and selling of shares, and hence it is the spot price that determines whether equity capital can be raised for exploration and development, and at what price. In this regard it is somewhat pointless talking about the long-term contract price, which is still sitting up around US\$70/lb.

In theory spot sales are marginal sales, often coming from surplus production or utilities adjusting inventory levels. Spot sales are generally much less than 20% of the total volume of uranium transacted. The long-term contracts are usually 3-7 years' duration with producers selling directly to utilities. The following chart shows how spot prices have traditionally been below long-term prices, except for the spike in 2007.



Source: World Nuclear Organisation

Where to From Here?

Any conventional analysis would overwhelmingly suggest that the uranium price must move higher in order to underwrite the supply response needed to satisfy the growing demand for uranium, and to fill the shortfall that will result from exhaustion of stockpiles and the weapons conversion program. However, the World is more concerned about what is happening this week than next year as the drive for liquidity is causing a meltdown in asset and commodity prices. The longer the short-term focus is dominant the more critical will be the shortage of uranium, 2-4 years out. Whether the price moves up much in anticipation of this shortage will depend upon whether speculators are willing to lead the market again.

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