

# Nuclear energy plans in Japan and China to boost uranium prices in 2014

☒ Uranium prices should improve considerably in 2014; certainly, there are all the prerequisites for a U308 'renaissance'. New reactors are being planned for construction and old ones slated for improvements. The uranium market has welcomed this week's announcement from the Japanese government that nuclear will continue to be included as an essential component of the country's energy mix. Since the Fukushima disaster, the price of uranium has experienced a severe 'correction'.

The spot market price for U308 has fallen to the USD\$ 35/lb. range, losing more than half its value over the past three years. In the medium and long term, Japan's return to the market is certainly reassuring for the future of uranium demand, even if Japanese energy companies are unlikely to rush to purchase beyond that they have already contracted or stockpiled. This suggests that the real demand boost will occur later rather than earlier in the decade. Nevertheless, China's uranium appetite is increasing rapidly. Japan plans to restart 17 reactors and almost half of those may resume activity in 2014 alone, as inspections clear them for safe usage. Meanwhile, China and Japan will inject by themselves, considerable demand into the uranium market. The United States, it may surprise some, also needs uranium imports because domestic supply is about one tenth of its current consumption and because the 1993 US-Russian 'Megatons to Megawatts Program', allowing the US to purchase surplus Russian enriched uranium from military stockpiles ended last year.

As of January 2014, Chinese uranium concentrate imports rose

22 % compared to the average monthly purchases in 2013. Importantly, in 2013, Chinese uranium imports reached a record of 18,968 tons of concentrate, exceeding the current needs of existing nuclear power plants, whose annual consumption is estimated at between 6,500 and 7,500 tonnes. Evidently, China is keen on accumulating uranium stocks and this should come as no surprise to observers of the energy sector. The Chinese government aims to install 50 GW of nuclear capacity by 2017; it now stands at 16.6 GW. Uranium production in China is still undermined by the poor quality of the available ore its slow development activity. Yet, the current price of uranium is too low and Chinese buyers have been exploiting the opportunity to buy and accumulate it at such low prices.

In 2013, Chinese – and others – U308 buyers, were able to pay less than USD\$ 50/lb for the first time since 2006. Since that time, it is estimated that China has accumulated close to 60,000 tons of uranium, which is about the same amount as is mined in a year (overall) and enough to fuel eight years of energy generation at today's rates. It is important, therefore, as also noted by such as analysts as Stefan Ljubisavjevic at the Macquarie Group, that spot uranium prices start rising in order to halt the uranium stockpiling at bargain basement prices before the Chinese government decides that they have enough stockpile. In other words, the analysts suggest that uranium producers slow production rates in order to raise prices. Nevertheless, there are more reassuring statistics for uranium investors, which suggest that slowing down production may be a little drastic.

More than three-quarters of the primary energy consumed on earth still comes from fossil fuels (coal, oil and gas). Due to a sharp drop in prices and rising worldwide energy demand, coal consumption has burst, reaching 6 billion tons per year; the International Energy Agency (IEA) has even predicted that coal will be the world's most consumed fuel for energy in the world – even more so than petroleum. For those of you, in the

northeastern and Midwestern USA and eastern Canada, still concerned about 'global warming' – hit by the coldest winter in years – coal is blamed for producing nearly half of global CO2 energy related emissions, while oil generates 30 % and gas 20%. How many CO2 emissions does nuclear energy produce? A negligible amount. So, rather than browbeat us with warning of cataclysmic events, flooding apocalypses and the end of skiing as we know it, governments should start to consider uranium as the true and effective energy source for the future.

Driven by global economic development, world energy consumption will only grow while renewable energy sources, which now account for just over 15% of world consumption, will be useful but will fulfill a complementary role because they are still a long way from being able to address the ever-increasing and unprecedented thirst for energy fueling economic growth in areas of the world with huge populations that have yet to even tap into the energy grid.

Energy generation will have to double at least over the next few decades 40 years. If you care about CO2 emissions, this increase will ensue only by using sources that do not produce it such as U308. For those who care about plain old soot and dirty air, smog, which lead to actual ailments, sickness and limit breathing, simply consider the current Chinese scenario. This past week, about 15% of China's territory, including the capital, Beijing was suffocating under record levels of pollution exacerbated by increased winter time use of coal. In Beijing, a thick layer of air pollution covered the city last week, prompting taunts and concerns on social networks and one citizen to actually sue the government. The U.S. Embassy in Beijing observed that, the density of soot particles to be 2.5 microns in diameter at a density of 400 micrograms per cubic meter in the capital, which is sixteen times higher than the limit of 25 micrograms recommended by the World Health Organization (WHO) in a twenty-four hours exposure. And note: this is while China is experiencing a supposed slow economic

growth period 6-7%, not the 11-12% of past seasons. Not surprisingly, the International Energy Agency suggests that up to 350 new nuclear reactors should be built worldwide by 2030 to address energy demand.

Experiments combining nuclear reactors with particle accelerators, as performed in Belgium, may lead to a process to incinerate radioactive waste in the long term, making nuclear energy even more 'palatable'. The scientists say that such a process will be operational in a decade, achieving a rapid neutron transmutation of elements contained in radioactive nuclear waste, reducing by a factor of 1000 for the period that these elements remain highly radioactive. This should remove one of the major obstacles is the source of opposition to a growing proportion of the public in the operation of this form of energy.

Last Wednesday, when the Japanese government formally announced its plans to continue using nuclear energy, shares of some of the main uranium producers did, in fact witnessed a welcome increase, including Denison Mines (TSX: DML) +10.8%, Cameco Corp (TSX: CCO) +4% and Energy Fuels (TSX: EFR) +4.6%. France's Areva (PA: AREVA), one of the largest uranium miners and reactor producers, suffered a bit but recovered on Friday, gaining 1.19%. The reason for the lower gains is unrelated to the uranium market and more closely tied to its risks in Niger and Mali.