

Uranium Prices At Record High

Uranium prices rocketed to their highest-ever levels last week as hedge funds plunged into the market and took big bets on prices rising even further.

The spot price for uranium oxide shot up \$10 a pound over the week to \$85 as buyers fought for the limited amount of the metal up for auction.

Analysts at RBC Dominion Securities, the Canadian bank that tracks the uranium market, said they forecast the average price for 2007 to reach \$100 a pound.

Uranium prices have increased eightfold over the past three years, and by \$13 a pound since the beginning of the year. It has become the latest commodity to enjoy a boom, following similar runs in the price of gold, copper and iron ore.

Market watchers say prices have been driven by three factors—an imbalance between supply and demand, an expected renaissance in the nuclear power generation industry, and now the entry of speculative buyers into the market.

Andrew Ferguson, manager of a quoted uranium investment fund, Geiger Counter, said, "We have hedge funds competing in the market for the very first time against the utility companies who are the normal buyers."

The world's 442 operating nuclear plants require 180 million pounds of uranium a year, but mines supply only 100 million, Timesonline.com said.

The remainder has to date been supplied by releases from strategic national stockpiles and from the decommissioning of nuclear weapons.

The latter two sources are expected to tail off as countries hold on to their stockpiles, and as existing weapons-decommissioning agreements expire.

Production from existing mines is also gradually declining, with the opening of mines in Australia, one of the world's biggest sources of the metal, a subject of considerable political controversy.

Climate-change worries have triggered a renewed interest in building nuclear power plants. China has plans to build 60, while America has given outline permission for the construction of a new generation of nuclear reactors.

The UK's plans to resume building nuclear power stations stumbled last week with the success of a judicial review brought by the environmental group Greenpeace. Despite the delay, Whitehall sources still expect a parliamentary vote on the issue in the autumn.

British Energy, the operator of most of Britain's nuclear power

plants, recently signaled an interest in joining a consortium to build more stations, and that it would contribute land at its sites.

This week's sharp jump in prices was thought to be caused by hedge funds scrambling to gain access to an auction on Tuesday by a US provider of a source of fixed-price uranium.

"Hedge funds, in particular, are interested in securing material on a fixed-price basis," said UX Weekly, an industry newsletter. "They are willing to bet on the future movement of price, but in order to do this they need to first tie down price."

Some analysts believe hedge funds and other nongovernmental or utility companies now hold about 15m pounds of uranium in storage.

Geiger said, "We are really into a perfect storm in this market. Prices have been high, but if you look at the fundamentals, I think they still have a long way to go."

Shares in uranium mining companies have also jumped this year, pushed up by rising metal prices and by the expectation of consolidation in the industry.

Two Canadian companies combined this month to create the world's largest uranium miner when UrAsia Energy agreed to a \$2.9 billion (£1.47 billion) reverse takeover by SXR Uranium One.

Homemade Hydro Power Lights Up Tajikistan

Tajikistan's eastern Gorno-Badkhash region had until recently largely escaped the energy crisis gripping the rest of the country. But on the night of February 5 the lights went off following an accident at the local power station that flooded the turbine room and shut down vital equipment. It's not yet clear how long it will take to fix the damage though officials have promised some service by mid-March.

In the meantime, electricity is restricted to three hours a day in the region's administrative center Khorog. Schools, factories and construction projects have shut down and bread shortages have been reported. Residents are coping with freezing winter temperatures by chopping down trees to burn as fuel and sending children to stay with relatives with wood burning stoves.

"We have no other choice," said local resident Muzaffar Kadamov. "We have to keep warm any way we can."

But these problems aren't unique to Gorno-Badkhash.

It has been a bad winter all across Tajikistan with power production dropping and demand increasing, forcing supply companies to impose tough restrictions on electricity usage. Even the capital Dushanbe has been affected with residents claiming supplies are now more limited there than during the civil war days.

Meanwhile, prices go up every year on the recommendation of the World Bank and the IMF which are attempting to encourage Tajikistan's power generation industry to be more cost-effective, Newswire.com said.

Such hardships have forced Tajiks living in rural communities to take matters into their own hands. Some villagers in isolated and mountainous regions have built mini-hydroelectric stations which can provide electricity for an entire village.

Ustokadam Saodatkadamov built one out of used car parts and it now provides electricity to 30 homes in the Shugnan region's Bachid village in Gorno-Badkhash.

Abdolkber Nazarshoev, a resident of Khuf in the Ruzhan region of Gorno-Badkhash, has also built his own hydroelectric station for around \$1,300-1,500(US). He harnessed water from a nearby canal and diverted it through a turbine which powers an engine that produces electricity for the village.

He says the station has already paid for itself, though needs careful monitoring to make sure it doesn't break down.

"We don't have problems with light anymore," said Nazarshoev. "Imagine how hard it is to have a



Rural villages in Tajikistan are finding local solutions to water and energy needs. Here villagers use a clean drinking water supply system.

wedding or funeral in winter. It's impossible to do this without electricity, but now everything is in order here. We reached an agreement with our neighbors, and every night one of us watches over the station, checks the state of the units and whether the river has frozen over."

Lukmon Akhmedov, from Unji in the Bobojongafurov region of the Sogd region, spent more than \$1,000 on his hydroelectric station, which powers the village hospital, among other things.

It has been so successful that he has been asked to build others by residents in neighboring villages, who will cover his expenses and receive electricity free of charge in return.

Energy experts expect larger scale hydro projects will eventually supplant the need for small-scale stations. (Photo courtesy FAIT)

Local tax inspectors have already taken note of this new industry springing up with some saying the entrepreneurs are using the country's water resources illegally and should therefore be liable for tax.

Legal expert Gulchekhra Mamadshoeva disagrees. "A citizen who builds a small hydroelectric station and does not receive income from it should not pay taxes," she said. "Furthermore, he does not pay the state for electricity, as the state energy company has nothing to do with this."

Tajik government tax authorities confirm that hydroelectric station owners who give away the electricity they produce rather than sell it don't have to worry about paying taxes. However, they advise entrepreneurs to watch out for unscrupulous inspectors who insist on payments.

Wild Grass Could Hold Key to Clean Fuels

A wild grass found in Asia and Africa could hold the key to dreams of providing an alternative to fossil fuels blamed for global warming, experts said.

Miscanthus, a perennial grass native to subtropical and tropical regions of Africa and southern Asia, was the ideal plant for producing ethanol at a lower cost than corn, currently the most widespread source of the fuel.

The grass, which is used as an ornamental plant in the United States, had produced yields between five and 10 times greater than corn, experts said.

"To make a pound of alfalfa or spinach requires about 600 pounds of water, while to grow a pound of Miscanthus requires only about 200 pounds of water," said Chris Somerville, professor of biological sciences at Stanford University.

Somerville was speaking at the American Association for the Advancement of Science's annual meeting, where climate change and sustainable development are two of the key themes, AFP reported.

Somerville said Miscanthus could help meet ethanol production targets set out last month by President George W. Bush, who wants to reduce the United States' dependence on foreign



The Manhattan skyline is seen in the background of tall grass.

oil.

Bush wants the United States to increase production of biofuels to 35 billion gallons (133 billion liters) a year by 2017, roughly seven times the present levels of five billion gallons a year, produced by corn-ethanol refineries.

Somerville said Bush's targets were substantial without "providing any insights into what he is going to do to make that happen."

Critics say Bush's goals are unrealistic because it would mean finding an additional 129,000 square miles of farmland—about the size of Kansas and Iowa combined—to plant enough corn to

meet the demand.

However, Somerville said Miscanthus-derived ethanol, which is distilled from the fermentation of sugars from the entire plant rather than just the grains, results in a higher yield per unit of land.

Miscanthus produces about twice as much biomass per acre without irrigation as other grasses, and reaching Bush's target of 35 billion gallons of biofuels annually would require far fewer acres of land.

Although environmentalists say planting corn for ethanol production will lead to widespread deforestation, Somerville said Miscanthus could be planted on land currently

used for food production. Somerville acknowledged deforestation was already taking place in Asia, where Malaysia, Indonesia and the Philippines were expanding palm oil crops for the production of biodiesel.

"But it is worse for the environment than climate change? That's the question," he said. "Climate change threatens biodiversity more than anything that I know."

"For example, in British Columbia they are losing each year forests the size of Rhode Island because of beetle infestation, because it is not cold enough in the winter to kill the beetles, and they are killing the forest."

'Unusable' Batteries Power Pickup

The problem with electric cars is they've always been so expensive that they aren't practical.

Two local men are working on a solution that could change that.

Gary Tang of Burnaby and Rob Matthies of Vancouver recently completed work on a 1982 Chevy S15 truck that runs on what would be considered unusable batteries. Earlier this month the two drove the pickup around Burnaby, making it the first time a four-wheel has run only off scrap or revived batteries.

It doesn't sound like much, but there are potential implications that could make the pair's drive around Tang's neighborhood history making.

"It looks like we are the first ones on the planet to have a licensed pickup truck to run exclusively off so-called dead batteries," said Matthies, who, like Tang, is a member of the Vancouver Electric

Vehicle Association, Burnabynewsleader.com said.

"It's pretty close to free energy because these batteries cost us nothing."

"So it's a free ride," he said.

If the battery revival technology could be improved on it could be used throughout the world, especially in Third World countries. It would also lower the cost of electric cars, since batteries would have a longer life.

Over two-thirds of the cost of an electric car is for the batteries.

According to Matthies there are approximately 100 million automobile batteries used up every year.

"We've taken batteries that most people would consider have exhausted their lives and are no long usable. And by a secret process we have revived them."

"We've been doing this for years with electric bikes and scooters and we find we can revive them between



Gary Tang (l) and Rob Matthies with their electric vehicle that runs off of old car batteries.

five and six times."

Electric cars could be an important tool in stopping or slowing down global warming. Gas powered cars are the single largest source of carbon emissions in many countries, including Canada.

Electric cars have no emissions.

"Canadians have to cut down their carbon emissions by 96 per cent to be just to the other nations of the world who are catching up to 96 percent reduction," said Matthies. "Our view is that there is no price high enough to

stave off global extinction, because that's what we're facing with global warming if we don't do something about it."

But electric cars still have a ways to go, said Tang, a mechanical engineer.

"An electric truck requires 1,600 pounds of lead-acid type batteries to drive in the range of 60 to 80 kilometers an hour. More expensive batteries like nickel metal hydride and lithium ion can increase the car's performance and decrease the weight.

Sustainable Energy will offer a new inverter to deliver power from small wind turbines to electricity grids at the same high efficiencies available to solar PV applications. Using proprietary technology, the new inverter will also have the capability to provide backup power during grid outages, and to connect hybrid systems incorporating both solar and wind energy.

The first product application will be for a residential scale wind turbine developed by Japan's Zephyr Corporation. The Airdolphin Mark-Zero is an ultra-quiet light-weight wind turbine which

Inverter Connects Wind Systems to Grid

Vital for Renewable Technologies

employs a number of innovative features unique to the industry that deliver lower operating costs and higher efficiencies than other small turbines and large megawatt scale turbines, Carbonfree.com said.

Sustainable Energy has agreed with Zephyr to

adapt the Company's Sunergy inverter platform for the Airdolphin turbine. The inverter incorporates recently developed proprietary software which enables it to operate in a grid interactive mode with very high efficiencies, and to switch to battery based mode for back up power during grid

outages. Under its agreement with Zephyr, the company has also acquired the right to bundle the Airdolphin with the new inverter product for distribution in Canada.

Based in Calgary Alberta, Sustainable Energy develops manufactures and markets advanced power inverters for the renewable energy industry. Power inverters are strategic to the integration of new renewable energy technologies—solar and wind power, fuelcells, and energy storage systems—into the high quality power demands of the modern electrical grid.