

2nd October 2023

Uranium price hit a 12-year high as governments rethink their nuclear strategies

Uranium price is moving in a near vertical fashion, reaching USD 70.1 per pound on 26th September, up by 43% YTD. The revival has been more than a decade in the making, after the Fukushima Daiichi disaster of March 2011 triggered an abrupt drop in uranium consumption and changes of strategies made by a number of governments towards nuclear energy.

Uranium price chart



Source: TradingEconomics

There are two main reasons behind this surge. Firstly, prior to the rapid price increase, the uranium market was already experiencing a tight supply situation due to reduced extraction at mining sites and the depletion of available stockpiles of inventories. It became challenging in the market to find natural uranium that could be delivered on a significant scale this year, making the market more sensitive to changes in supply and

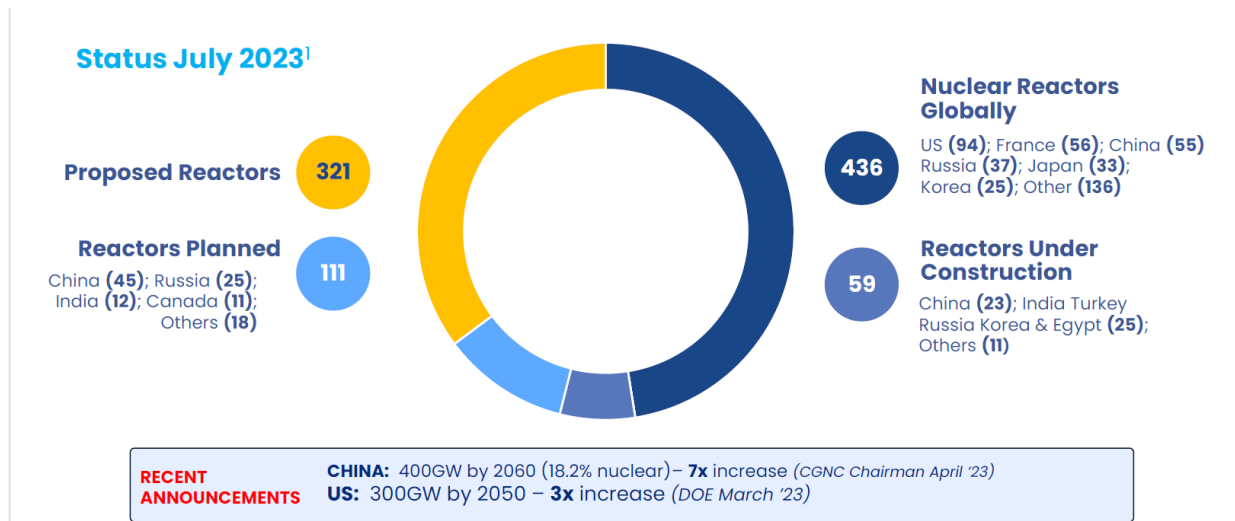
demand. UxC, a pricing data provider, reported that 121 million pounds of uranium were bought under long-term contracts year-to-date vs. a total of 114 million pounds in 2022. Besides, physical funds (which buy uranium and store it away) are back in action. Institutions such as SPUT have begun establishing inventories to create a physically backed uranium ETF, driving prices further upward.

Secondly, disruptions on the supply side accelerated the price increase. Early in September, the closure of Niger's borders resulted in the shutdown of a uranium processing plant. Niger contributes approximately 5% to global uranium supply. Additionally, on 3rd September Cameco, the world's largest publicly traded uranium company, announced a downward revision of its 2023 uranium production guidance. Due to technical issues encountered at two major production sites (Cigar Lake and McArthur River), the total natural uranium production guidance for 2023 was cut by 8.2% to a total of 30.2 million pounds.

Taking a longer-term view, the milestone for uranium prices marks a big step towards nuclear power's re-emergence as a critical source of power in global efforts to tackle climate change. Finland's Green Party which for decades had been a fierce opponent of nuclear power did a U-turn and voted overwhelmingly in 2022 to rewrite its party manifesto and categorize nuclear power as a form of sustainable energy. Other political U-turns on nuclear power have materialized in other countries including Spain, Belgium and, most recently, in Sweden, where a government energy target was reworded from "100% renewable" to "100% fossil-free" to allow for greater use of nuclear power.

On 7th September, the World Nuclear Association (WNA) said that demand for uranium in nuclear reactors was expected to climb by 28% by 2030 and nearly double by 2040 as governments ramp up nuclear power capacity to meet zero-carbon targets. Globally there are 59 reactors under construction and 111 under planning. It already accounts for a 40% growth in demand for uranium. In addition, there are 321 additional reactors under study worldwide.

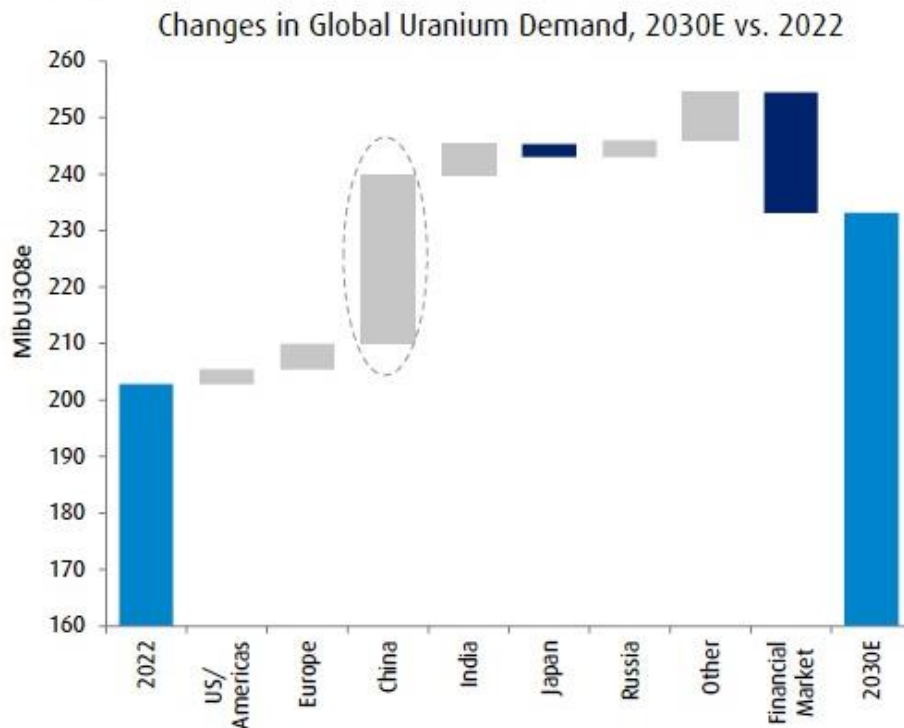
Strong world nuclear power reactor growth



Source: World Nuclear Association

The majority of new nuclear power generation capacity will be in China, as the country is aggressively pursuing nuclear energy to replace coal, which still provides the bulk of the country’s energy needs. China wants to multiply its nuclear power generation by 7 over the next 35 years. China's nuclear power installed capacity reached 56.76 gigawatts in the first half of 2023, with total investments in nuclear power projects amounting to RMB 35.9 bn over the period, up by 56.1% YoY.

China is the key driver for uranium demand



Source: WNA, BMO Capital Markets

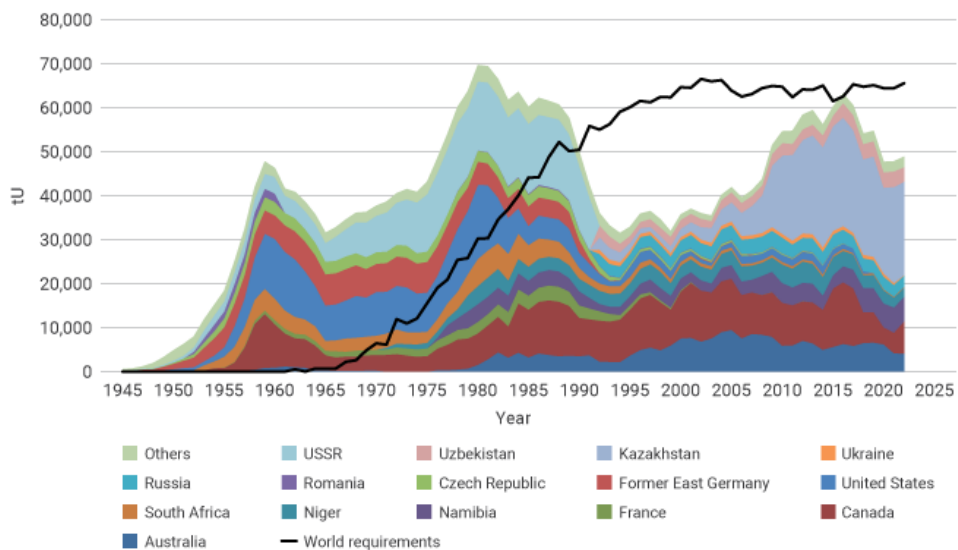
Source: World Nuclear Association, BMO Capital Markets

Australia, Kazakhstan, and Canada respectively control 28%, 13%, and 10% of the world's uranium reserves. These three countries are also the main producers of uranium. International mining companies control the largest production sites. The top three companies in terms of production in 2021 were Kazatomprom (from Kazakhstan), Orano (from France, formerly known as Areva) and Uranium One (from Russia), which accounted altogether for 40% of the world's total production.

Uranium prices have been low for over a decade, which has had a twofold impact on uranium supply. Firstly, many uranium mines were shut down due to low prices, leading to a decrease in uranium production. Secondly, the low prices have made it uneconomical for companies to stockpile uranium. There is less uranium available for future use.

Today uranium production remains below demand. In 2021, global uranium production was 43,731 tons, only 74% of total nuclear reactors' demand volume. The 10-30% supply gap was made up by depleting available reserves and by recycling spent uranium. However, these solutions are not sustainable as a significant production shortfall remains. A rise in production capacity needs investments, and in the meantime uranium price is being pushed up.

World uranium production and reactor requirements, 1945-2022



Source: World Nuclear Association

However, other factors should also be considered to analyze the recent trend of uranium price as the renewed interest for nuclear energy does not explain everything. Firstly, a vast majority of nuclear power plants in Europe and the United States are over 30 years old, reaching, and in many instances well past their planned lifetimes. It is fueling safety issues among engineers who are concerned about extending their operations beyond their initial lifespans, and in some instances, it has triggered an outright push-back against increasing output levels. Secondly, uranium accounts for only one third of the fuel cost of reactors. The enrichment of uranium remains the principal expense, a process that requires a lot of energy. Currently the enrichment capacity is sufficient for existing reactors, but this could

quickly become a bottleneck as new reactors come online. If there is a shortfall in enrichment capacity, uranium price will likely be capped. Thirdly, if the expansion of uranium production capacity remains limited in the short term, there are still large volumes of uranium inventory available, estimated to cover 3 to 4 years of global demand. It can limit the price increase when demand is tight. Finally, the cost of building new nuclear plants has sky-rocketed over recent years. The countries that can afford to build additional nuclear plants may opt instead to expand their supplies of renewable power (solar, windpower).

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