



PANTHER MINERALS

Uranium on a run on robust fundamentals

Uranium prices have soared in 2024 reaching a 16-year high, surpassing \$90 USD per pound. Increased demand for nuclear energy as the baseload for our transition to renewable energy has led to a constrained supply market. European utilities seeking new supply chains outside of traditional Russian sources and the United States pushing legislation and initiatives to bolster a domestic uranium market have created fertile ground for rapid and continued uranium market growth.

Growing energy demand driving uranium's rise

In 2023, the global demand for uranium was approximately 65,650 tonnes driven by the operation of 416 nuclear reactors worldwide, with significant contributions from the United States, China, and France, which collectively represent around 58% of global uranium demand.

Demand for uranium is projected to rise to 83,840 tonnes by 2030, a 28% increase from current levels and by 2040 the demand is expected to nearly double, reaching 130,000 tonnes as countries ramp up nuclear power capacity to meet zero-carbon targets.

Our digital economy is also driving the need for uranium as in 2022, global data centers consumed approximately 200 terawatt-hours of electricity, accounting for about 1-2% of global electricity consumption and in the United States alone, data centers used around 4% of the country's total electricity. AI is another major factor as the creation of GPT-3 consumed approximately 1,287 megawatt-hours of electricity.

By 2026, the International Energy Agency (IEA) projects that the electricity consumption of data centers will double to around 1,000 TWh. This increase is roughly equivalent to the current total electricity consumption of Japan.

By 2030, data centers are expected to consume between 620 and 1,050 TWh of electricity annually, driven by the growing demand for cloud services, 5G networks, and AI applications. This could represent up to 7% of global electricity consumption.

Uranium supply chain insecurity

Kazakhstan is the largest producer of uranium globally, accounting for about 43% of the world's total production. In 2022, it produced 21,227 metric tonnes (MT) of uranium. Namibia ranks third, with a production of 5,613 MT in 2022. Uzbekistan produced 3,500 MT in 2022, with substantial contributions from its Navoi Mining & Metallurgy Combinat.

This significant concentration from a small number of countries makes the supply chain vulnerable to geopolitical tensions, regulatory changes, and export restrictions.

For instance, Kazakhstan has faced significant political instability, particularly in the wake of large-scale protests and government crackdowns in January 2022. Not to mention, Russia's intervention through the Collective Security Treaty Organization (CSTO) to support the Kazakh government, adding another layer of geopolitical complexity that could impact uranium exports.

In Namibia, the competitive nature of the 2024 elections, combined with deep-seated grievances and the potential for disputed results, could lead to post-election violence. This combined with continued economic hardships and perceived government inaction and alleged corruption could further destabilize the political situation and impact uranium production.

Uranium market outlook

Projections indicate that uranium prices could rise to \$105 per pound by 2025. Factors driving this include increasing demand for nuclear energy and continued supply disruptions from major producers like Kazakhstan.

By 2030, demand for uranium is expected to increase by 30%, which could push prices higher. Analysts forecast that prices might reach \$115 per pound due to structural deficits in supply and the increasing adoption of nuclear energy as a clean energy source.

Beyond 2030, the bullish outlook continues, with uranium prices projected to maintain an upward trajectory, potentially reaching higher levels if supply challenges persist and demand from new nuclear reactors increases globally.

Due to this, long-term fundamentals of the uranium market remain strong, with increasing term contract volumes indicating robust future demand. In 2023, 121 million pounds of uranium were put under long-term contracts, compared to 114 million pounds in 2022.

Inventories are depleting, with the U.S. holding 104 million pounds at the end of 2022, down 4% year-on-year, reflecting only about two years of forward coverage.

Domestic uranium supply in the U.S.

This increasing demand and supply chain insecurity has powered initiatives to promote domestic production and refinement. The U.S. Department of Energy (DOE) established a \$75 million uranium reserve to ensure a reliable supply of uranium in case of market disruptions.

The DOE awarded approximately \$150 million in cost-shared funding to American Centrifuge Operating, LLC, for the demonstration of domestic high-assay low-enriched uranium (HALEU) production. HALEU is crucial for advanced nuclear reactors, which require uranium enriched between 5% to 20%. The Inflation Reduction Act has provided an additional \$700 million to support the HALEU Availability Program.

In March 2024, Congress allocated \$2.72 billion to enhance domestic uranium enrichment and conversion capabilities. The funds are directed towards expanding the production of low-enriched uranium (LEU) and HALEU. The American Nuclear Infrastructure Act also includes provisions to support the domestic uranium industry through financial incentives, grants, and regulatory streamlining.

The U.S. is also working with allied countries through initiatives like the "Sapporo Five," which includes the United States, United Kingdom, France, Japan, and Canada. Together, these countries have pledged \$4.2 billion to expand global enrichment and conversion capacity. The U.S. contribution includes \$2.72 billion from the Bipartisan Infrastructure Law.

Conclusion

In the end, the uranium market is poised for significant growth driven by increasing demand for nuclear energy and persistent supply challenges. Prices are expected to remain robust in the near term and rise steadily over the medium to long term as the world shifts towards cleaner energy sources and addresses the structural supply deficits. This bullish outlook makes uranium an attractive investment opportunity for the foreseeable future.

Sources:

[Uranium Prices Jump to 16-Year High on Supply Woes — Analysis](#)

[World Nuclear Industry Status Report](#)

[Nuclear Fuel Report / Uranium Demand Expected To Surge By 28% By 2030](#)

[New report reveals a precious resource we all use could diminish by 2026](#)

[As Use of A.I. Soars, So Does the Energy and Water It Requires](#)

[Top 10 Uranium-producing Countries \(Updated 2024\)](#)

[Longing for Justice in Kazakhstan](#)

[Namibia: November 27](#)

[Navigating the Upcoming 2024 Elections](#)

[DOE Announces Cost-Shared Award for First-Ever Domestic Production of HALEU for Advanced Nuclear Reactors](#)

[Biden-Harris Administration Takes Action to Secure Nuclear Fuel Supply Chain, Equip Revitalized Domestic Nuclear Industry for the Future](#)

[Uranium stocks are soaring. Here's why and what's next](#)



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