

## **Uranium Report 2024**

Everything you need to know about uranium!



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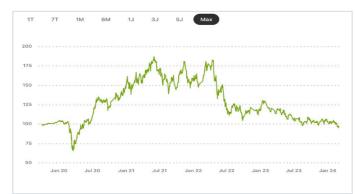
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### **Imprint**

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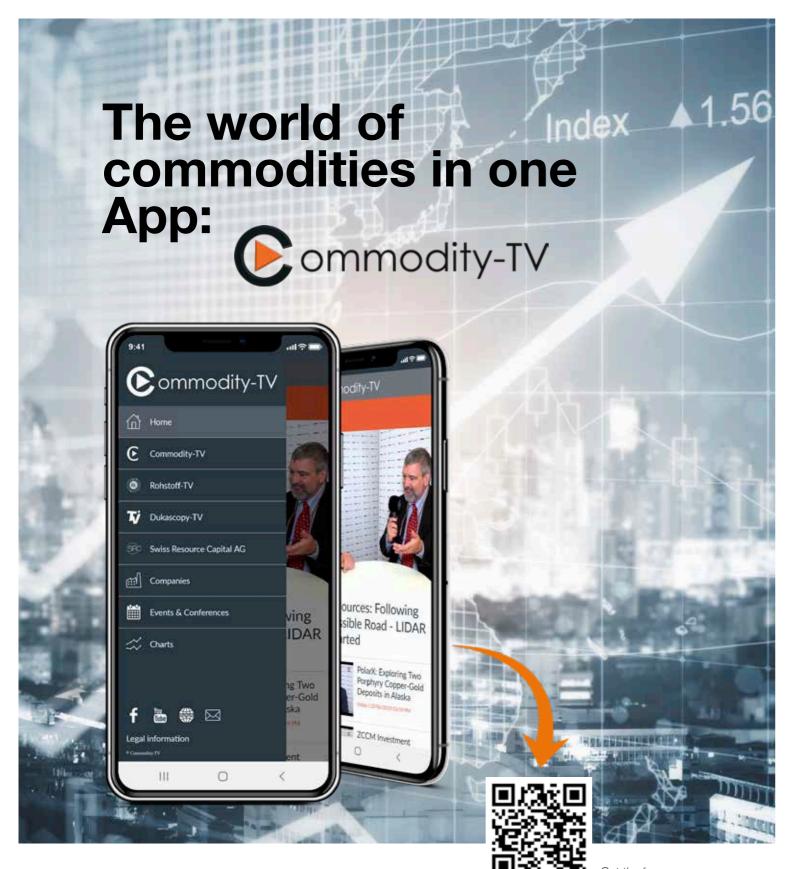
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#### **Preface**

Dear Readers.

With this issue of the Uranium Report 2024, we are already in the eighth year of this special report series, for which we were criticized and ridiculed for many years. Early on, we wondered how we would charge all the electric cars and where the base load electricity would come from if we had more and more uncertain renewable electricity sources. Without CO2, only uranium and nuclear power can keep up. In contrast to Germany, the market and many countries have now realized this. In Germany, industry is moving away because electricity is no longer affordable in addition to the bureaucracy. Nuclear power plants are being built around Germany and around the world on an unprecedented scale. The price of uranium has not only risen but has also reached our first major target of US\$ 100 per pound. We see the current consolidation as a breath of fresh air. As expected, the imbalance of weak supply and rising demand has now translated into rising prices. We see uranium prices rising well above US\$ 150 per pound in 2024 and can also imagine US\$ 200 per pound in the next two years.

The USA is once again on the path to independence in uranium, as it was with oil a good 20 years ago. The US government is massively promoting its own industry and is already building up its own enrichment capacities. The mines are benefiting because they want to have uranium mining in the USA again. Nuclear power is saving many countries from their former dependence on electricity or power generation with Russian gas and oil. Germany's special path, which was often praised by Mrs. Merkel, has turned into an energy disaster that is now hurting the country, even if the Green-Red coalition does not admit it. How vou can shut down safe nuclear power plants in the third largest economic area in the world and then buy the electricity from your neighbor France at four times the price and want to be celebrated for it is a mystery to me. Almost all countries that already operate nuclear power are building more new nuclear power plants. This is because they have realized that e-cars actually need to be charged at affordable and predictable electricity prices. Otherwise, they will no longer be bought, no matter how much they are subsid-

Small Modular Reactors (SMRs) have a bright future. These are nuclear reactors that are smaller than conventional reactors and can be manufactured in a factory and then transported to an assembly site. This would make it possible to produce more decentralized electricity without having to build so many new power grids across the country. Microsoft has already announced up to 300 data centers in the USA for artificial intelligence. Each data center will have an SMR...

Investors such as Buffett and Gates have long since recognized that solar and wind are not capable of providing base load as long as no adequately large storage facilities for electricity from renewable energy sources are created and have made the corresponding funds available for the research and construction of SMRs.

This report is intended to provide interested investors with an overview of the uranium industry and the real facts.

Of course, we also present some interesting companies in the sector with facts and figures. This should be seen as a suggestion and not as a recommendation to buy as there are very few listed companies left.

Raw materials are the basis of our entire economic life. Without raw materials, there are no products, no technical innovations and no real economic life. We need a reliable and constant basic energy supply for our highly industrialized world.

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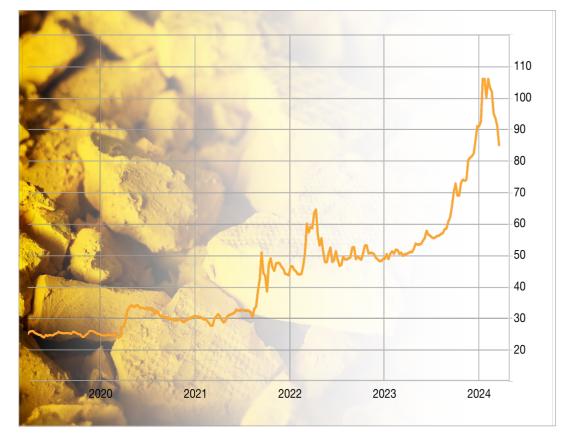
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# The nuclear power sector is at the beginning of a huge renaissance: uranium companies will benefit most from this in the coming years!

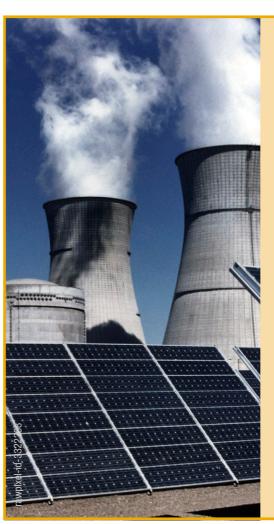
Nuclear power is on the verge of a gigantic renaissance, as the latest resolutions at the COP 28 World Climate Conference and the nuclear summit in Brussels in mid-March once again impressively demonstrated. A total of more than 40 nations have committed to building new nuclear power plants, extending operating times and tripling nuclear power capacities by 2050. This will also further increase the share of nuclear energy in total CO<sub>o</sub>-free energy generation, with nuclear power being able to provide the only significant base load of all CO<sub>2</sub>-free energy sources. However, large quantities of baseload capable and at the same time CO<sub>2</sub>-free energy can only be produced using an incredibly energy-rich source material. This source material is uranium, and the price of uranium recently reached the magic mark of US\$ 100 per pound again. However, even this price level is likely to be just an interim step on the way to new all-time highs, as the supply-demand situation is currently intensifying rapidly – and we are only at the very beginning of a new civilian nuclear age!

Many nuclear power nations such as China, India, Japan, the UK, France and the USA are working on restarting, extending the service life or building new nuclear reactors and many other nations have returned to nuclear energy or want to have their first reactor on their own soil. In the future, a large number of smaller reactors – so-called "Small Modular Reactors", or SMRs for short, which can be manufactured modularly in factories and installed at almost any desired location – will play a major role and ensure an unprecedented increase in demand.

Uranium supply, on the other hand, has been lagging behind demand for years and is slow



Uranium price development over the last 5 years (own presentation)



## Base load capacity is essential for a stable energy supply

Base load capability is the ability of a power plant to provide a continuous, reliable supply of electrical energy. This includes nuclear power plants, coalfired power plants, gas-fired power plants, oil-fired power plants and steam power plants fired with substitute fuels. Combined heat and power plants, biomass and biogas power plants can also be base load-capable under certain conditions, although fossil or renewable raw materials must also be burned. The only electricity generation from renewable energy that is base load-capable is hydroelectric power plants, although this often requires major intervention in nature.

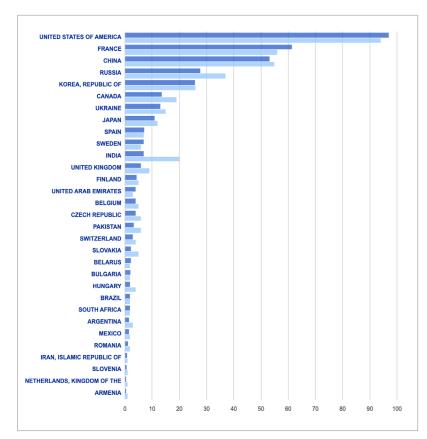
Due to their often highly fluctuating generation and therefore feed-in, photovoltaic and wind power plants are not base load-capable, at least not until adequate storage media are available.

to expand significantly. This is primarily due to uranium mines – some of which have been closed for years – that were shut down when uranium prices were around \$20 and cannot be restarted within days. New mines even need a lead time of 8 to 10 years for approval and construction.

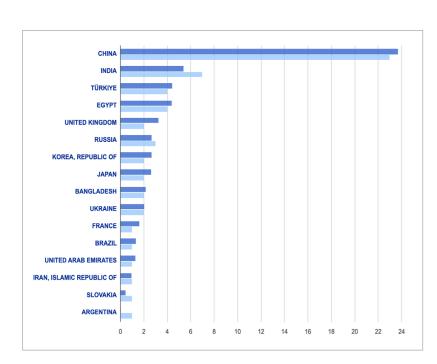
All in all, the utilities' warehouses, which were still well stocked a few years ago, are almost empty and the uranium spot market has dried up. The two largest uranium producers in the world, Kazatomprom and Cameco, have reported that their entire expected production has already been "sold out" by the end of 2025. At the same time, these majors

in particular are having problems ramping up their uranium production as desired and recently had to make massive downward adjustments to their production figures.

There will be a cumulative shortfall of around 400 million pounds of triuranium octoxide  $(U_3O_8)$  over the next 10 years alone. For 2024, a supply of around 155 million pounds of  $U_3O_8$  is expected, which will not even come close to meeting the demand for 195 million pounds of  $U_3O_8$ . This blatant undersupply of uranium opens up excellent opportunities for interested investors to participate in the uranium market. Some interesting investment opportunities can be found in this report.



Overview of the currently running reactors (light blue) and the net electrical output (blue). www.iaea.org/PRIS



### The number of civilian nuclear reactors continues to rise

The global reactor fleet for civilian use (reactors for military use, such as for powering nuclear submarines, are not included in this uranium report) continues to grow – both in terms of the number of reactors and net electrical output.

Since the beginning of 2023, 7 new nuclear power reactors have been connected to the grid worldwide, including 2 in Europe (Belarus + Slovakia) and 2 in the USA (Vogtle-3 and Vogtle-4). In addition, two Japanese reactors, Takahama-1 and Takahama-2, which had been offline for a long time, were reconnected to the grid. At the same time, construction began on 6 new reactors, including 4 in China and 2 in Egypt. In mid-March 2024, 32 nations were operating 415 reactors with a total net electrical output of around 373.2 gigawatts. 25 others were undergoing maintenance at this time and could be reconnected to the grid in the future.

The USA is currently the leading nuclear power nation with 94 reactors in operation. However, emerging economies such as China, India, Turkey and several Arab nations are leading the way in terms of new construction, as they require more and more energy and have been focusing on a massive expansion of their nuclear power capacities for some time now. There are currently 57 additional nuclear reactors under construction with a total net electrical output of around 59.2 gigawatts – 23 of them in China alone, 7 in India, 4 in Turkey and 4 in Egypt. Planning has already been completed for well over 100 additional ones and more than 300 others are being planned worldwide.

Overview of the reactors currently under construction (light blue) and the corresponding net electrical output (blue) per country www.iaea.org/PRIS



### **Uranium: The most important facts & figures**

## Nuclear fission chain reactions are only commercially possible with uranium

Uranium is named after the planet Uranus and is a chemical element with the element symbol U and atomic number 92. Uranium is a metal whose isotopes are all radioactive. Uranium occurring naturally in minerals consists of around 99.3% of the isotope 238U and 0.7% of 235U.

The uranium isotope 235U can be fissioned by thermal neutrons and is therefore the only known naturally occurring nuclide, apart from the extremely rare plutonium isotope 239Pu, with which nuclear fission chain reactions are possible. For this reason, it is used as a primary energy source in nuclear power plants and nuclear weapons.

#### Occurrence

Uranium does not occur naturally in solid form, but always in oxygen-containing minerals. There are a total of around 230 uranium minerals that can be of local economic importance.

There is a wide range of uranium deposits from magmatic hydrothermal to sedimentary types.

The highest uranium contents are achieved in unconformity-bound deposits with average

uranium contents of 0.3 to 20 %. The highest grades are over 70% U<sub>2</sub>O<sub>2</sub>!

According to the International Atomic Energy Agency (IAEA), the largest uranium ore reserves are located in the USA, Niger, Australia, Kazakhstan, Namibia, South Africa, Canada, Brazil, Russia, Ukraine and Uzbekistan.

### **Uranium mining**

There are basically two different methods of uranium mining: Conventional mining and extraction using in-situ leaching or in-situ recovery (ISR). The exact extraction method depends on the characteristics of the ore body, such as depth, shape, ore content, tectonics, type of host rock and other factors.

#### **Conventional mining**

The majority of uranium is extracted by underground mining. The deposits are accessed via shafts, tunnels, ramps or spirals. Problems are often caused by the ingress of mine water and ventilation (technical measures to supply mines with fresh air). The exact mining method is chosen according to the characteristics of the deposit. In particular, the shape of the ore body and the distribution of uranium in it are decisive. In deep mining, an ore body

can be mined in a targeted manner, resulting in much less overburden than in open-pit mining.

Near-surface or very large ore bodies are preferably extracted in open-pit mines. This enables the use of cost-effective large-scale technology. Modern open-pit mines can be a few meters to over 1,000 meters deep and several kilometers in diameter. Open-pit mining often produces large quantities of overburden. As in deep mining, large quantities of water may have to be lifted for open-pit mining, although ventilation is less of a problem

#### **ISR** mining

In the ISR method, water and small amounts of CO<sub>2</sub> and oxygen are injected into the sandstone layers using so-called injection wells, the uranium is extracted and pumped back to the surface for further processing using socalled recovery wells. The entire process therefore takes place completely underground. The advantages of this process are therefore obvious: there is no need for major earthmoving as in open-pit operation, and there are no spoil heaps or drainage basins for heavy metals and cyanides. Only the wells are visible on the surface; the areas around the wells can continue to be farmed without any restrictions. The ISR process also makes low-grade deposits economically mineable, greatly reducing the capital costs of mine development. Furthermore, the entire process can be carried out with a minimum of manpower, which also drastically reduces operating costs. According to a study by the World Nuclear Association, 25% of the uranium mined outside Kazakhstan recently came from ISR mines.

## This year's demand will amount to around 195 million pounds of U<sub>3</sub>O<sub>8</sub>

## The USA is once again clearly focusing on strengthening its nuclear power plant fleet

With 94 reactors, the USA has by far the largest active nuclear power plant fleet in the world. In 2023 and 2024, two new reactors, Voatle-3 and Voatle-4, were even connected to the grid for the first time in a long time. Strengthening and expanding its civilian nuclear power capacities is also desperately necessary for the USA, as the United States is still the country with the highest per capita consumption of electricity in the world. The USA therefore has no choice but to increase the number of its nuclear reactors in the coming years in order to guarantee a certain proportion of CO<sub>a</sub>-free base load. Accordingly, the expansion of the nuclear power plant fleet is also part of the "Green New Deal" initiated by President Biden, which is intended to lead the country towards CO neutrality. Alongside the expansion of wind and solar energy, nuclear power is a top priority.

In recent years, more than 60 US nuclear reactors have applied to have their operating lives extended to at least 60 years. In addition, there are around 40 applications for the construction of new nuclear power plants. Around 20 reactors are currently in the concrete planning phase.

## China wants to increase energy generation from nuclear power sevenfold

For several years now, China has been setting the pace in the construction of nuclear power plants. The Middle Kingdom operates 55 reactors with a total net electrical output of 53.2 gigawatts and has so far mainly used coal to generate electricity. Of these, 18 new reactors alone have been commissioned since the beginning of 2018.

The Chinese government is planning to build more than 80 new nuclear reactors over the next 15 years and over 250 new nuclear reactors by 2050. The aim is to increase the current net output from nuclear power seven-fold to up to 400 gigawatts! Initially, 110 reactors are to be connected to the grid by 2030, which means that the USA will have taken over as the current leader. A total of 23 nuclear reactors are currently under construction.

#### India is finally stepping on the gas

India, the world's most populous country, is planning to expand its nuclear energy capacity by at least 70 gigawatts in view of its growing hunger for energy.

A total of 20 Indian nuclear reactors (6.9 gigawatts) are currently in operation. India mainly has small reactors with only 202 megawatts but will increasingly rely on large reactors with more than 1,000 megawatts in the future

There are currently 7 nuclear reactors under construction in India, with a further 40 to follow by 2050.

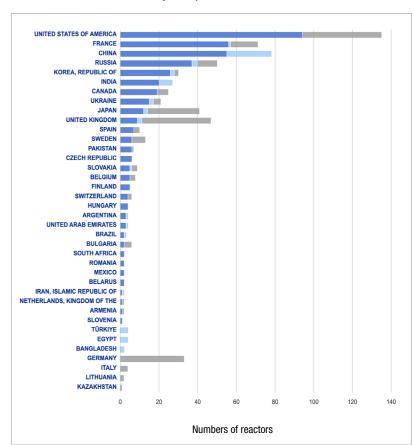
## Russia wants to drastically shift its energy mix towards nuclear power

Russia has also started a massive expansion of its nuclear power plants. The country currently operates 37 nuclear reactors with around 27.7 gigawatts. 3 plants are currently under construction. In addition, Russia is planning to build over 40 more nuclear power plants, which will increase the share of nuclear energy in the Russian energy mix from the current 15% to over 25%.

## Japan is not only bringing existing reactors back online but is even building new ones.

Twelve years after Fukushima, Japan, once the world's second largest producer of nuclear power, is once again operating 12 of its 50 reactors. These have undergone a strict safety protocol and are already running at full capacity again. A further 21 reactors are currently in maintenance and inspection mode and could follow in the coming months and

years. Japan has also returned to the ever-growing circle of nations that are building new reactors. Accordingly, 2 larger reactors are currently under construction again in the Land of the Rising Sun. Japan is also planning to extend the lifetimes of existing nuclear power plants to over 60 years. The aim is to generate around 25 percent of electricity from nuclear power by 2030. Before Fukushima, the proportion was 30 percent, whereas in 2020 it was only five percent.



## Many other nations are working to increase global nuclear power capacity and have agreed specific expansion targets

In addition to the 32 nations that already have nuclear reactors on the grid, nuclear power plants are under construction in 16 countries. These include Argentina, Bangladesh, Slovakia, Egypt and Turkey. Other countries such as Jordan and Indonesia are planning to build several reactors in the coming years.

Overview of the reactors currently in operation (blue), the reactors currently shut down (gray) and the reactors under construction (light blue). (www.iaea.org/PRIS)

At the COP 28 climate conference in Dubai last year, the heads of state and government of 22 countries also agreed to triple nuclear power generation by 2050. At the nuclear summit held in Brussels in mid-March 2024, 32 countries also committed to accelerating the construction of new civilian nuclear reactors and extending the lifespan of existing plants. Among other things, France wants to build up to 14 new nuclear reactors, two of which are due to start construction in 2024.

## A large increase in demand can be expected in the future from smaller, modular nuclear power plants

At the moment, only large reactors with rated outputs of well over 1,000 megawatts are used to generate electricity. However, a huge future growth market for uranium is currently emerging. These are so-called "Small Modular Reactors", or "SMRs" for short, i.e. small units that can be built modularly in a factory and transported to the subsequent site of use. The individual SMR units usually have an output of less than 300 megawatts and can be operated for 3 to 5 years without fuel reloading - in base load operation without interruption. Since the 1950s, countless aircraft carriers and submarines, which are reliably supplied with power by smaller reactors, have proven that this works. SMRs offer the advantage that they can be installed almost anywhere in the world, making them ideal for decentralized energy supply and particularly interesting for smaller grids, island states or remote locations such as mines and military bases. In the UK, Canada, Belgium and the USA, significant progress has already been made in terms of government financial support for these innovative, carbon-free energy sources.

Microsoft founder Bill Gates, for example, is working on the development of such small reactors and is pushing for the construction of a corresponding plant in Wyoming to replace a coal-fired power plant there. Gates' company TerraPower is to have a sodium-cooled fast reactor with an output of 345 megawatts. Using molten salt storage technology, the

plant's output can be increased to 500 MW for more than five and a half hours if required, thus supplying around 400,000 households. An existing example of such a power plant is the Akademik Lomonosov, which Russia commissioned in 2019 as a floating power plant in northern Siberia to supply several mines and a settlement with a population of 4,000.

China commissioned two SMRs in 2021, each with a thermal capacity of 250 MW.

Rolls-Royce has also long since entered the future billion-euro business of SMRs and has developed a pressurized water reactor with an electrical output of 470 MW. The individual parts of the reactor blocks are to be transported by truck and mass-produced. Approval in the UK is expected by 2024, with the first reactor going online in 2029.

Belgium has already earmarked 100 million euros in funding for research into the development of smaller modular nuclear reactors in 2021. Poland, Romania, Estonia, the Czech Republic, Sweden and the Netherlands have also released corresponding funding or started research work. The use of SMRs also appears particularly interesting for heavy container freighters, which currently run on expensive diesel oil.

France wants to become a future leading player in the field of SMRs. President Macron has pledged billions in state funding for this. The French start-up Naarea is already developing a molten salt reactor for this purpose, which is due to be completed between 2027 and 2028. Series production of many reactors with a capacity of around 40 megawatts could then follow from 2030.

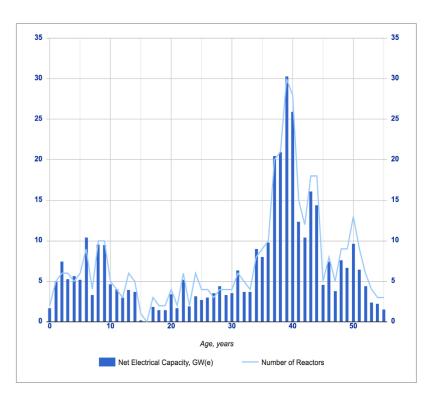
#### Nuclear power operators are seeking new long-term supply contracts by the dozen

The previous cycle of contract conclusions, which was dominated by the uranium price peaks of 2007 and 2010, led to plant operators agreeing to contracts with higher price

levels and very long terms of around 8 to 10 years. The vast majority of these old contracts have long since expired, although many utilities have not yet found a replacement for these supply volumes and have instead made use of the once completely oversaturated spot market. This has now all but dried up. At the same time, a large part of the expected reactor demand up to 2030 is not contractually secured. In the case of a commodity such as uranium, which is only traded to a limited extent, this return to more "normal" long-term contracts is likely to exert enormous pressure on both long-term prices and spot prices. International plant operators are therefore showing increasing signs of stepping up their purchasing activities or concluding new, long-term contracts.

Overview of the age of the reactors currently in operation. Many of them will (have to) be replaced by more powerful ones in the coming years.

(www.iaea.org/PRIS)



## This year's offering will be limited to 155 million pounds of $U_3O_8$

### Uranium production is rising again, but the massive shortfall remains

In 2022, around 130 million pounds of  $\rm U_3O_8$  were extracted from mines worldwide. This was significantly less than in 2016, for example, when more than 160 million pounds of  $\rm U_3O_8$  were produced. In 2023, global production was around 145 million pounds of  $\rm U_3O_8$ . Leading experts expect around 155 million pounds of  $\rm U_3O_8$  to be mined in 2024, around 40 million pounds less than will be demanded.

## Kazakhstan remains the leader in uranium mining, but production is declining

Kazakhstan is the undisputed world leader in uranium production. The Central Asian coun-

try has multiplied its uranium production since the turn of the millennium. Between 2000 and 2019, uranium production in the former Soviet republic rose from 1,870 to over 22.808 tons. As a result, Kazakhstan overtook the previous leader. Canada, in 2009 and is currently responsible for more than 40% of total global uranium production. In 2020, production fell to 19,477 tons due to production cuts caused by low prices and the effects of the coronavirus pandemic. Kazakhstan produced around 21,800 tons of uranium in 2021 and around 21,200 tons in 2022. Kazakhstan's quasi-monopolist and the world's largest uranium producer Kazatomprom also recently revised its production forecast for 2024 from 25,300 to 21,750 tons, mainly due to a shortage of the required sulphuric acid. There are also warnings that the production plans for 2025 will also have to be revised downwards.

## Former producing nations struggled with weak uranium prices

The established uranium-producing nations of Australia, Canada, Russia and Niger were already struggling to expand their production before the coronavirus crisis. All four countries together produced just under 16,430 tons of uranium in 2021. In 2009, it was still 28,000 tons of uranium. Some mines were shut down due to the weak uranium spot price or a lack of further reserves.

## US uranium production is only very slowly getting back on track from virtually "ZERO"

Although the USA remains the largest consumer of uranium in the world, the uranium industry has recently come to a virtual standstill. Since 1980, practically nothing has been invested in the development of new deposits and almost 95% of the uranium required has been obtained from disarmament programs. The US nuclear reactors consume around 21,000 tons of uranium annually. An increase in capacity would therefore also mean an increase in the amount of uranium required. The World Nuclear Association (WNA) estimates that around 35,000 tons of uranium will be needed annually in the USA alone by 2035. US uranium production reached its previous peak in 1980, when around 29,000 tons of uranium were extracted from the ground. After the end of the Cold War, disarmed nuclear weapons became the most important source of uranium for the US. This led to a decline in American uranium production to less than 100 tons of U<sub>2</sub>O<sub>0</sub> in 2022. As a direct result, much of the infrastructure and licensed production facilities were simply closed or completely dismantled. There are currently only a few mining licenses left in Texas, Arizona and Wyoming. However, several companies have recently been working on new licenses for their processing plants. Overall, the USA has a production capacity of around 30 million pounds of U<sub>2</sub>O<sub>2</sub> per year, but only around half of this has a production permit.

### Massive production cuts from 2017 led to the stabilization of the uranium price

Although Kazakhstan is one of the nations that can currently mine uranium at the lowest cost, the country was no longer prepared to sell its uranium deposits at rock-bottom prices a few years ago. The state-owned company Kazatomprom announced at the beginning of 2017 that it would cut its own uranium production by at least 20%. In May 2018, Kazatomprom announced further production cuts. In addition, production had to be further reduced due to coronavirus.

However, Kazatomprom was not the only uranium producer to cut production in light of the weak uranium price. Uranium major Cameco also announced corresponding production cuts and closed its McArthur River mine and the facilities at Key Lake in January 2018, initially for an indefinite period. The Rabbit Lake mine was also closed, both of which are still among the ten largest uranium mines in the world. McArthur River was the mine with the second-highest uranium production and the highest grades worldwide. With the temporary closure, 10% of total world production was taken off the market in one fell swoop. Production is now starting up again, although Cameco's own production targets for 2023 were missed by a wide margin and full capacity will not be reached again until 2024.

From 2017 to 2022, Kazatomprom ultimately reduced its uranium production by around 15% and Canada by around 45% on average, with around 50% of production coming to a standstill during the coronavirus pandemic. In addition, major uranium mines such as Moab Khotseng in South Africa, Husab and Rössing in Namibia, Ranger in Australia and Cominak in Niger were closed, to name just the most important ones. The spot market, whose supply is mainly made up of uranium that is extracted as a by-product in other mines, has also recently seen a decline in supply due to various mine closures.

## Huge supply gap has existed for years

Even before the coronavirus pandemic, the supply deficit was around 40 million pounds of uranium per year. In 2020, the supply deficit was around 57 million pounds of U<sub>2</sub>O<sub>2</sub>. which corresponded to around a quarter of global annual demand. In 2021, the International Atomic Energy Agency (IAEA) recorded a supply deficit of 50 million pounds of U<sub>2</sub>O<sub>2</sub>, in 2022 of 40 million pounds of U<sub>2</sub>O<sub>2</sub> and in 2023 of around 45 million pounds. The current demand is still largely covered by stockpiles, which are therefore rapidly running out. There has been a de facto supply shortfall since 2017, with consumption at the current level of 415 nuclear reactors worldwide at around 195 million pounds of U<sub>2</sub>O<sub>2</sub>, of which only around 155 million pounds are expected to be covered by global uranium production in the current year.

Over the last five years, global production has therefore fallen short of global uranium consumption by around 230 million pounds.

## Deposits are stable – There is an acceptable range at higher uranium prices

Based on a market price of US\$ 40 per pound of uranium, experts estimate that just under 715,000 tons of uranium can be mined economically. With a current annual consumption of around 70,000 tons of uranium, these deposits would be sufficient for just 10 years, provided the market price remained constant at a minimum of US\$ 40 during this period and demand also remained constant. However, this will inevitably increase.

At a market price of US\$ 80 per pound of uranium, around 1.28 million tons of uranium could be mined economically. Range with today's consumption: 18 years.

If the uranium price were US\$ 130 per pound, around 3.79 million tons of uranium could be mined economically. The known reserves would then last for around 54 years at current consumption levels.

# Summary: The existing supply deficit will accelerate in the future, as demand will increase faster than supply can keep up with new mines

## A future supply deficit is almost inevitable, even at the current spot price

The IAEA estimates that the global demand for uranium will increase to up to 260 million pounds of  $\rm U_3O_8$  per year in 2030 due to the construction of new nuclear power plants. In the past 5 years, there has already been a de facto supply shortfall of between 40 and 60 million pounds per year. In its latest Nuclear Fuel Report, the World Nuclear Association assumed an annual increase in demand of 3.1% until 2040. At current levels, there will be a cumulative supply gap of around 400 million pounds of  $\rm U_2O_0$  by 2034

and around 1.14 billion pounds of  $\rm U_3O_8$  by 2040. The main reason for this is that hardly any new mines with significant production will come on stream before 2030. The approval of a new mine takes around 8 to 10 years on average, with the construction of the mine and corresponding facilities taking a further 2 to 3 years.

#### High demand leads to less enriched material from the same initial quantity

Another challenge is a simple technical issue: Enrichment. At times of lower de-

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mand, the enrichment plants can run their centrifuges for longer and thus extract more enriched uranium from the supplied source material (underfeeding). At times of higher demand and scarce capacity, less time is available for enriching the feedstock. The yield is correspondingly lower (overfeeding). If the amount of enriched uranium is to be maintained, more of the starting material is required as input for the enrichment process. It can therefore be assumed that around 20 million pounds more uranium are currently required than during the underfeeding period due to the enrichment problem alone.

## Uranium price must continue to rise in order to sustainably increase production

This makes it clear that the apparently cheapest and only base-load-capable CO<sub>2</sub>free way of generating electricity can only continue to be used if the market price for uranium as a raw material continues to rise. Demand and supply also regulate the market price for uranium. However, if the market price does not permit economic extraction. it must and will inevitably rise. In the case of uranium, there is also the fact that demand will rise sharply due to the construction of several hundred new nuclear reactors and at the same time new mines cannot come online overnight, so that the market price benefits twice over. And thus, of course, also those investors who have recognized this trend early enough.

#### A high proportion of demand is currently unmet – large producers report "sold out"

Unmet demand is expected to exceed one billion pounds of U<sub>3</sub>O<sub>8</sub> over the next ten to 15 years. Much of the expected reactor demand up to 2030 will not be contractually secured, although some utilities have already signed new supply contracts with Cameco, Orano and others. For a commodity such as uranium, which is only lightly



The USA and EU are increasingly relying on nuclear power as a green, base-load energy source (shutterstock)

traded, this return to more "normal" longterm contracts is likely to exert enormous pressure on both long-term prices and spot prices. The fact is that the two largest uranium producers in the world, Cameco and Kazatomprom, are already sold out until the end of 2025.

## Special opportunity USA: The United States wants to reduce its dependence and is relying on uranium from its own mines

The USA is currently trying to become less dependent on the immensely high uranium imports, primarily from the successor states of the former Soviet Union. To this end, the US Congress has approved a budget that will provide US\$ 150 million annually over 10 years to create a strategic uranium reserve. This reserve is to come entirely from uranium from US mines. The Biden government

even wants to increase this amount to up to US\$ 4.3 billion over the next 10 years.

## Uranium investors buy spot market empty and thus cause price increase

Only recently, several other strong market players have joined them, securing U<sub>2</sub>O<sub>2</sub> on the spot market at a low price, which mostly comes from mines where uranium is a by-product. In addition to Cameco, which has been acting as a uranium buyer itself for some time in order to service long-term, higher-priced supply contracts with corresponding uranium quantities at the spot price, the Sprott Physical Uranium Trust (SPUT), ZurInvest and Yellow Cake Plc, were also able to purchase larger quantities of uranium. All these players have taken well over 100 million pounds of U<sub>2</sub>O<sub>2</sub> from the spot market since the beginning of 2021. Furthermore, uranium companies such as Uranium Energy, Uranium Royalty, Denison Mines and Boss Energy also bought physical uranium in order to be able to act flexibly and fulfill supply contracts in the event of an imminent start of production.

## The best uranium stocks promise multiplier potential!

We have taken the current situation of a uranium spot price that is still too low plus the continuing massive supply deficit as an opportunity to provide you with a compact summary of promising uranium stocks. We are concentrating primarily on development companies with extremely promising projects, as these offer a high takeover opportunity in addition to the actual appreciation due to a higher uranium spot price.

The two expert interviews, which provide additional information and investment ideas, should also be noted.

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# Interview with Scott Melbye – CEO of Uranium Royalty, Executive Vice President of Uranium Energy and Ex-Advisor to the CEO of Kazatomprom



Scott Melbye is a 37-year veteran of the nuclear energy industry having held leadership positions in major uranium mining companies as well as industry-wide organizations. Through to June 2014. Melbye was Executive Vice President. Marketing, for Uranium One, responsible for global uranium sales activities. Prior to this. Melbye spent 22 years with the Cameco Group of companies, both in the Saskatoon head office and with their U.S. subsidiaries. He had last served as President of Cameco Inc... the subsidiary responsible for marketing and trading activities with annual sales exceeding 30 million pounds U<sub>2</sub>O<sub>2</sub>. Melbye was formerly the Chair of the Board of Governors of the World Nuclear Fuel Market and President of the Uranium Producers of America. He also currently serves as Executive Vice President of Uranium Energy, was VP-Commercial for **Uranium Participation** Corporation and was Advisor to the CEO of Kazatomprom, the world's largest uranium producer in Kazakhstan. Melbye received a Bachelor of Science in Business Administration with specialization in International Business from Arizona State University in

Mr. Melbye, nuclear power is experiencing a true rebirth. Many nations are planning to build new reactors to generate environmentally friendly, CO<sub>2</sub>-free energy. To what extent is nuclear energy CO<sub>2</sub>-free and how can nuclear energy contribute to improving the world's climate and energy supply?

As the global economy struggles with the triple challenge of securing energy supplies that are clean, economic and reliable, Nuclear Energy has a key role to play in addressing all of these, and as such, we have seen an unprecedented embrace of nuclear power for its abundant, affordable and carbon-free attributes. For the first time in the modern history of nuclear energy, we are seeing broad support for nuclear power from the political Right and Left, the investment community, and both environmentalists and industrialists. Whether one values the clean energy benefits of this leading green-energy technology, or prioritizes the reliability and affordability of 24/7, baseload power, nuclear energy delivers on all accounts. It is as carbon-free and safe as wind and solar yet runs 95% of the time versus 30% for intermittent renewables. Moreover, its energy-dense uranium fuel serves as a price hedge against volatile fuel costs compared to fossil-fired generation. It is not surprising then that in the past 10 years the world has seen 68 large, modern nuclear power plants connected to the global electric grid and 61 more commence construction. The September 2023 edition of the World Nuclear Association (WNA) Uranium Supply and Demand Report projected a 75% increase in nuclear generation by 2040 (138% in the high case). If this expected doubling of nuclear energy was not enough, the COP 28 Climate Change Conference in Dubai witnessed world leaders from 22 countries pledge to triple nuclear energy generation by 2050. Over 150 nuclear industry companies present in Dubai responded with their own pledge to support this goal in their investments and commercial activities.

There are currently around 438 operable nuclear reactors worldwide. To what extent will the reactor landscape change over the next two decades and will we see small modular reactors experience growing acceptance, deployment and market share?

Large traditional, nuclear reactors continue to be fuelling these robust growth rates in nuclear generation. This comes from both new builds in countries that seek to add substantial, sources of baseload electric power to their grids, and from the uprating and extension of existing units in the established nuclear markets. Given the growth and modernization in the emerging markets, and the further electrification of the developed world, particularly in transportation and advanced technologies, nuclear will continue to grow in helping to meet those needs. Furthermore, we are now seeing very exciting developments in the deployment of small modular, or advanced, reactors (SMR's). These are not the 1500-megawatt massive power stations that we have become accustomed to, but rather smaller 50-300-megawatt units that can be constructed in a factory with lower up-front capital, shipped on site and built in a scalable, modular manner. Once these innovative plants can get past the first-build hurdles in the latter half of this decade, they promise to be safe, affordable, clean and flexible energy sources. They can adapt well to large grids already burdened with substantial intermittent renewable sources and present viable alternatives to retiring coal fired power plants. They can also serve as a main source of power to remote communities, or for uses in industrial or mining applications. Whether it is GE Hitachi in Canada, Rolls Royce in the United Kingdom, or X-Energy, TerraPower or NuScale in the United States, these SMR's and advanced designs are receiving substantial commercial interest that is being boosted by strong government support in terms of their initial deployment. In a significant 2021 announcement, the U.S. State of Wyoming will see a

Bill Gates, TerraPower, Natrium reactor constructed on the site of a retiring coal-fired power station (Warren Buffett's Pacific Corp. utility being the buyer). Not only can this advanced reactor make a clean energy transition, but it can also connect into existing grid infrastructure, and jobs can be preserved in the impacted fossil fuel sector. On the Texas Gulf Coast, X-Energy has partnered with Dow Chemical to power their massive petrochemical facilities with 24/7, carbon-free nuclear power. Central Europe is proving to be a promising market for this technology as these countries are facing a number of energy challenges. While historically dependent on coal-fired power generation, they are being pushed towards lower carbon alternatives by the European Commission. At the same time, they want to avoid the dangerous reliance on Russian natural gas. Large western reactors and SMR's are proving to be the desired fit under those constraints and challenges. For example, in Poland, the large copper producer, KGHM, has partnered with NuScale to have their scalable SMR's supply carbon-free electricity to produce "green copper" in their energy-intensive industry. The Polish Ministry of Climate and Environment has also already given the green light to twin Westinghouse AP-1000 reactors with a capacity of 3750 Mwe, and other reactor projects are in the proposed and planning stage. Analytics firm Wood Mackenzie has concluded that the worldwide pipeline demand for small modular reactors has expanded by two thirds since 2021, amounting to about 22,000 megawatts of additional new nuclear capacity added to the global grid in the coming

Uranium prices recently broke through the \$100 per pound level, a more than doubling of the price in just over 12 months. Even despite a more recent drop into the \$80's per pound range, this is up significantly from the bear cycle lows of \$17.70 per pound in November 2017. What

#### is behind this bull market move in uranium prices?

Uranium prices have indeed been on a dramatic recovery which can be attributed to a number of basic supply and demand fundamentals, in combination with a mix of global mega-trends and geopolitical developments. This confluence of factors has created a very real supply-squeeze in the period 2024-26 where new supplies are desperately needed while existing mines are fully committed under contract, and new mines (only beginning to be incentivized) will be slow to materialize. To make matters more extreme, we now have the demand bar being raised again with robust growth in nuclear generation.

We have been talking about the rebalancing of supply and demand factors for some time, and recent events have only accelerated that development. Following a period of uranium over-supply brought on by the impacts of Fukushima, global uranium producers began to take steps to rationalize their production plans around the time long term contract hedges were beginning to roll out of supplier portfolios. Despite falling prices throughout the decade, global production had increased and peaked in 2016. From 2017 onward, however, we finally saw supplier discipline translate into reduced production levels and the shut-in of mines around the world. In fact, over the past 8 years, global production has lagged global uranium consumption by over 450 million pounds. This has had the impact of drawing down global secondary supplies to help bring the market into balance. Some producers, like Cameco, not only shut-in production, but entered the market as buyers to backfill their substantial long term contract commitments.

A couple of major developments also came along to throw gasoline on the fire. The COVID-19 pandemic, for one, impacted roughly 50% of global uranium production at its peak, yet fortunately spared the nuclear power plant, uranium-consumers who oper-

ated reliably as essential services throughout this time. As such, uranium demand was unimpacted while major mining operations, like those in Kazakhstan and Cigar Lake in Saskatchewan, Canada, saw their output decreased, even beyond the discretionary mine cutbacks. Additionally, on the production side, the uranium market is experiencing the end-of-mine-life of several key operations. This includes the Ranger mine in Australia (which ceased operations in 2021), the Akdala mine in Kazakhstan, and the Cominak mine in Niger. Additionally, the decade of low uranium prices did very little to incentivize the pipeline of new projects or encourage the restart of idled mines. This will dramatically impact the production response in this emerging supply squeeze as mines are not permitted, licensed or developed overnight, and in fact, can take 6-10 years to accomplish (with no guarantee of success). Market observers should also not ignore the impacts of global inflation on the price thresholds of mine restarts and development. There may be a general misperception of the level at which uranium prices will incentivize new mines.

In 2023, we have also witnessed the vulnerability of the fuel cycle to geopolitical events (beyond Russia/Ukraine). The sub-Saharan African nation of Niger has seen its democratically elected President deposed by a military coup. This major uranium jurisdiction has been supplying a quarter of European needs for many years, particularly into former colonial power, France. French diplomatic relations have been severed and their sizeable military presence expelled. With border closures affecting inbound supplies and outbound uranium exports, this not only impacts existing uranium mines, but also those currently under development.

#### Should we be concerned by the recent spot price pullback and is there something in the fundamentals that we are missing?

While frustrating to see the uranium equities off their 52-week highs in the face of such

positive fundamentals, the short answer is, no. These uranium price movements have been driven by very, very low volumes with thin supplies being offered to buyers hoping for further weakening. It's important to note that thin markets can turn equally as quickly to the upside as a modest uptick in buving activity will easily consume these limited offered quantities. We really can't lose sight of the broader fundamentals which point to a 402-million-pound supply gap through 2033 which cumulatively climbs to 1.33 billion pounds by 2040 (according to UxC Consulting). Some market observers actually see this move as a healthy consolidation following a meteoric rise in uranium prices and equities, providing a base from which the next leg of the bull market can resume. The long-term uranium investor should view this dip as an excellent opportunity in which to buy their favorite uranium companies "at discount prices".

#### With this sort of production/consumption gap prevailing for so long, have we finally made a dent towards drawing down the over-hang of global inventories?

Yes, most definitely, and more than just a dent. Most market observers agree that the era of excess inventory and secondary supplies has come to a close. These voluntary and involuntary reductions in global mine production allowed the market to fully draw down the over-hang of inventories. The excess uranium supply which built up from the effects of Fukushima and, frankly, over-production throughout the first half of the decade has effectively been removed from the market. This has been dramatically accelerated through the purchasing activities of non-traditional uranium buyers.

Such category of buyers would include producers, like Cameco, backfilling contract commitments from the open market and smaller producers like UEC, establishing low-cost inventories at near the bottom of the cycle. There have also been speculative buyers including Uranium Royalty Corp., Yellow Cake Plc., Sprott Physical Uranium Trust

"In the African state of Niger south of the Sahara, the democratically elected president was deposed in a military coup. This important supplier of uranium covered a quarter of European demand for many years, particularly to the former colonial power France."

(SPUT), Zurlnvest, who are accumulating holdings of physical uranium on behalf of their shareholders seeking price exposure to uranium. Similarly, we have seen hedge funds make direct purchases of spot uranium in which they hold to realize capital appreciation of the asset. Collectively, these categories of buyers have had a profound impact on the rebalancing of the uranium market, having purchased over 100 million pounds in the past two years. SPUT has been the major player in all this, now holding 63.6 million pounds of warehoused uranium on behalf of investors, and as a closed-end fund, have no intention, need, or mandate, to sell back into the market. While I am reluctant to describe these developments as "catalysts", preferring to reserve that term for the major underlying supply and demand fundamentals. I would clearly describe these events as a major tipping point in the market re-balancing. The rather thinly traded and inefficient uranium market was already heading from over to under-supply from both traditional supply and demand trends, however, the magnitude of spot buying appears to have accelerated the market recovery forward by a couple years. The significance being, the market has now transitioned from being inventory-driven, to one reliant on the cost and timing of production from new and restarted mines. Many market observers, both suppliers and consumers see this translating into a classic supply squeeze in the 2024-26-time frame as demand and purchasing have returned to robust levels at the

same time inventories have been depleted and new mine production cannot respond quickly enough.

Given Russia's role as a major global nuclear fuel cycle supplier, and the invasion of Ukraine going on close to two years, how has their isolation and sanctioning impacted the uranium market?

If the supply and demand rebalancing, COVID-19 impacts, and non-traditional uranium buving was not enough, the appalling and unprovoked invasion of sovereign Ukraine by Russia is proving to permanently reshape the uranium market in a number of ways going forward. The Rosatom uranium enrichment complex represents 45% of global installed capacity, and closely aligned Kazakhstan is the worlds largest uranium producer. In the United States for example. 20-25% of the enriched uranium comes from Russia and close to 50% of natural uranium supplies are sourced from Russia. Kazakhstan, and Uzbekistan. The Russian (Rosatom) fuel purchases amount to roughly US\$1.0 billion in hard currency per year towards Putin's war efforts. Western Europe has similar levels of reliance. We would be correct in pointing out the risk management folly of putting that many eggs in Putin's basket, but the reality faced today is not whether to move away from Russian fuel reliance, but how quickly can this be achieved without harm to the nuclear power plant consumers. Not only are these supplies potentially sub-

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"In Europe alone, we are seeing the reversal of the phase-out of nuclear energy in countries such as Belgium, the Netherlands and Sweden and a renewed commitment to nuclear energy, as we are seeing in the UK and France."

ject to sanctions (the U.S. Congress inches closer to a complete ban with hardship waivers), but they could also be subject to a Kremlin export embargo knowing how strategic these energy supplies are to the West. Yet, other companies have remained true to their moral and ethical values and have voluntarily ceased Russian purchases (Swedish Vattenfall having made this decision on the first day of the invasion). Other utilities are facing mounting pressure to act from shareholders and customers, as this hardly reflects leading social responsibilities and ESG best practices. Central European utilities face a more daunting task in refueling their Russian designed VVER reactors with western fuel but are committing to do so by switching to Western manufacturers, like Westinghouse. Most of these countries, are fully committed to the transition given the first-hand perspective of Russia's carnage and the exodus of refugees. From a supply and demand perspective, we have to assume perhaps a permanent shift away from Russian uranium fuel reliance. While this may have dramatic impact on uranium prices in the near term, it is a signal of a strategic shift towards more geopolitically stable suppliers that are not under the influence of Russia or China. The United States Congress, recognized this vulnerability and passed the Nuclear Fuel Security Act into law in December as part of the broader National Defense Authorization Act. The related appropriations bill, funding this initiative at \$2.7 billion, also passed the House and Senate and was signed into law by President Biden in March. These bills serve to revitalize the domestic uranium, conversion and enrichment industries by expanding the Strategic Uranium Reserve to include U.S. produced enrichment services (both low-enriched and higher assays). These bills include an important condition precedent that a separate legislative or administrative ban on Russian Uranium imports must be enacted before funding can be disbursed. Overwhelming bipartisan support exists for the ban in the House and Senate and is only being held up on an unrelated procedural play by Senator Ted Cruz of Texas. The expectation is that this ban will pass sooner or later subject to the Congressional processes.

One country at a crossroads of these geopolitical developments, is Kazakhstan, the world's largest uranium producer. While they do not fall under Russian sanctions, the export of their uranium to the West through the Port of St. Petersburg has grown increasingly difficult. Much of 2022 and 2023 was spent trying to develop an alternative logistic route through the Caspian Sea, through Armenia and Azerbaijan to a Turkish Black Sea port. While proven feasible, it brings its own unique complexities and increased costs. It can also be reasonably speculated that a globally sanctioned Russia will exert its influence in the region to retain more of these supplies for their own use. The outbreak of a full-blown war in the Armenian Azerbaijani province of Nagorno-Karabakh, further complicates the transportation of sensitive uranium shipments. Kazakhstan also shares a geographic border with China, the world's fastest growing nuclear market. Both of

these countries already have significant uranium production assets in Kazakhstan and that footprint is being aggressively expanded. Russia's Rosatom/Uranium One have acquired the largest new mine in Kazakhstan, Budenovskoye, through a controversial sole-source transaction blessed by the Astana sovereign wealth fund. Samruk-Kazyna. Russia now controls over 50% of Kazakh uranium production. These moves bring on even greater strategic significance given Moscow's increasing global isolation. China will not be outdone and are rapidly consolidating the other half of Kazakh uranium production. This is evidenced by increased direct ownership in Kazakh joint ventures, like the substantial Ortalyk mine, huge recently announced export contracts. and the global trading hub established in Alashankou, a rail port of entry into China, which will all ensure more uranium being directed towards Beijing, and less to the UK, Europe, North America (and Russia). In addition to the foregoing, Kazatomprom has reported supply chain challenges, particularly in the kev input of sulphuric acid needed for their In-Situ Recovery mining process. Some very significant misses to production guidance, and reduced forecasts, have rattled the uranium market in recent months.

## How has this Russia/Ukraine conflict impacted nuclear power in global national energy policies?

The humanitarian catastrophe that is the Russian invasion of Ukraine will impact society in many ways for years to come. Perhaps the most lasting impact on global energy will be the renewed and keen awareness towards energy independence and security. Energy Ministers from around the world are reassessing how their energy is produced and from where it is coming from. No longer will it be acceptable to outsource strategic energy supplies (and other critical minerals. goods and services) to countries that do not have shared values and interests. Multinational cooperation will still exist, but a much greater emphasis will be placed on domestic control of strategic resources. Nuclear energy has a very important role to play in this societal shift. Nowhere has this become more evident than with the failed energy policies of Germany over the past 15 years. The Merkel approach of "Energiewende" promised abundant clean and affordable electricity though billions of Euros invested in green energy renewables, and a very deliberate and unequivocal phase out of nuclear energy. The result has been quite the opposite. Germany has instead "succeeded" in achieving electricity prices over 100% higher than neighboring nuclear France, while making very little progress in its carbon reduction goals, losing their largest source of carbon-free energy (nuclear) and instead increasing reliance on dirty lignite coal. Another, troubling result of this policy was the overwhelming reliance on Russian natural gas. The latter causing not only supply shocks to the German economy but conflicting the German Government in taking stronger ethical geopolitical positions during this profound humanitarian crisis. Last year's acts of sabotage to the Nord-Stream pipeline certainly raised the stakes in this "energy

In Europe alone, we are seeing the reversal of phaseouts of nuclear power in countries like Belgium, the Netherlands, and Sweden, and a renewed commitment to nuclear energy like we are seeing in the United Kingdom and France. The Swedish Parliament dramatically changed course in their energy policy, calling for a 10-fold increase in their nuclear generating capacity. On a broader perspective, the European Commission's taxonomy debate conclusions ultimately vielded to the pronuclear member arguments and deemed nuclear energy a green and sustainable energy source for the Community's energy needs (albeit with conditions). Nowhere is this more abundantly clear than in Central Europe where the threat of Russian aggression and energy weaponization is not a new concept. Countries such as Poland. Romania, Czech Republic, Slovenia, and Slovakia are not only placing increased value on their existing fleet (switching fabricated fuel suppliers from Russia's Rosatom to Westinghouse) but are engaging in new build

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A conceptual illustration of small modular reactors, showcasing the trend towards scalable and flexible nuclear energy. (Generative Ai by adobestock)

of large western reactor designs and fully embracing the benefits of small modular and advanced reactors. Put simply, the EU (and society at-large) is encouraging their shift away from the current heavy reliance on coal, and Russian gas is not an option. Renewables can contribute up to point but cannot be a baseload 24/7 source of uninterruptable electricity.

### What does this all mean for uranium investors?

As we have been saying for some time, the market fundamentals have been ripe for a significant and sustained recovery in uranium prices. We are now seeing this come together in a very big way, assisted by the mega-trend towards energy decarbonization and supply shocks that have been brought on by a global pandemic and geopolitical situations. We should remember the last bull market in uranium began from a place of very weak uranium demand. little to no investment in uranium exploration and development, and flat uranium prices below global costs of production. The resumption of new reactor builds in the nuclear renaissance, combined with supply shocks at major production centers (floods and fires in Canada and Australia), resulted in a period of uranium prices trading in the \$70 to \$137 per pound range. I can't help but draw the comparisons to today where even stronger, broad-based support of nuclear energy has emerged along with supply shocks and uranium speculation in historic proportions.

Early investors in this cycle are now being rewarded for their patience and foresight, and new investors are finding the nuclear energy and uranium story to be an extremely compelling sector in which to focus their capital for growth in the coming years. Given that we have only recently emerged from a period where the name of the game for uranium producers was to simply "leave it in the ground", to one of needed uranium expansion and growth, we are still in the very early stages of this cycle. Investors will be wise to focus on the companies that have positioned themselves through an extremely challenging time of survival to be ready to seize on these significant opportunities going forward. Indeed. very exciting times for uranium as the promise of clean, reliable, safe and resilient nuclear energy becomes more widely appreciated in a lower-carbon world.

# Interview with Dr. Christian Schärer – Manager of the Uranium Resources Fund and Partner of Incrementum AG

Mr. Schärer, we recently saw a uranium spot price of over US\$ 100 per pound. Is everything now "hunky-dory" for the uranium companies?

The price increase to just over USD 100 per pound has helped the uranium sector to attract some attention. This is unusual for a sector that is still perceived by the investment community as an absolute niche market. This is despite its undisputed economic importance. Uranium supplies the fuel for nuclear power plants and these cover around 11% of global electricity demand. This is low-CO<sub>2</sub> produced, secure and permanently available (7 x 24) base load, which is made available to the electricity grids at competitive costs and contributes significantly to their stabilization.

The most recent price increase on the uranium spot market has also been dynamic. The price has doubled in six months, reaching the USD 100 per pound mark. However, this development is not unusual in a historical context. After bottoming out in 2018, the spot price recovered in several spurts and completed the bottoming-out phase in 2021. The sharp rises were always consolidated as part of longer sideways movements. This also appears to be the case in the current environment. However, the perceived volatility of the price trend is increasing. This appears to be due to the low market liquidity on the uranium spot market. This is a consequence of the supply gap that has existed on the uranium market for some time. The demand for uranium is greater than mine production. So far. this deficit has been covered by the reduction of available stocks and by supply from secondary sources. As a consequence of this supply/demand constellation, however, there will be a significant reduction in available inventories over time, leading to reduced liquidity on the uranium spot market. Against this backdrop, we expect the increased volatility of uranium (spot) prices to accompany us over the next few quarters. Investors' nerves will be strained accordingly. The good news. however, is that this volatility plays both ways.

Our investment hypothesis is based on the expectation that the existing supply gap in the uranium market will be closed via rising prices. Higher uranium prices provide the incentive to bring production that has been shut down for economic reasons back onto the market and to bring new mining capacity into operation. Higher uranium prices are an essential prerequisite for the market to return to a new equilibrium.

Against this backdrop, reaching the USD 100 mark on the spot market is a promising signal. At this price level, a large proportion of the advanced uranium projects should have realistic economic prospects. However, further conditions must be met for successful realization. Mathematicians would note that a uranium price of USD 100 per pound is necessary but not sufficient.

From the perspective of the uranium mine operator or project developer, the prospect of price continuity is also relevant in addition to reaching a certain price level. Due to the complex planning and approval processes, many years pass before a uranium mining project can be successfully realized. A time horizon of 10 years or more is the rule rather than the exception. In addition, a mine should ideally have a comparable time perspective with regard to the production period. Accordingly, it is not the one-off achievement of the USD 100 mark that is relevant, but a realistic prospect of sustained high prices for the coming years. This perspective opens up if the supplier (mine operator) can conclude long-term purchase agreements with the buyers (power plant operators) at sustainably attractive conditions. We can take this opportunity to point out the long-term nature of this business. Mines and power plants are built with the prospect of a long operating life. This explains the importance of the long-term perspective when making investment decisions, both on the supply and demand side.

In this context, the most recent price trend can be viewed positively. While the spot price



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"Against the backdrop of geopolitical changes, the USA has become increasingly aware of its own dependence on imports. With the world's largest reactor fleet, the country covers around 20% of its electricity requirements from nuclear power plants. There is no longer any significant domestic production, although the country was once a major uranium producer."

is often a good (short-term) sentiment indicator for the situation on the uranium market. the scope and conditions under which longterm supply agreements are concluded signal the sustainability of the observed price movement. In this respect, developments in 2023 and the start of the current year have set the signals to green. Last year, the contract volumes of long-term supply agreements reached the replacement rate of 1 for the first time in over 10 years. This means that a volume was agreed on a contractual basis that roughly corresponded to the year's uranium consumption. The agreed prices have also been fixed much more constructively for suppliers. However, it must be noted that the agreed conditions are not transparent due to confidentiality clauses in the contracts. The contracts cover far more than agreed quantities, prices and delivery dates. Accordingly, they can only be comprehensively assessed on the basis of anecdotal reports from the contracting parties. However, it is clear that the uranium market has changed from a buver's to a seller's market over the last few quarters. The improved prospects for mine operators should significantly stimulate the recommissioning or realization of new pro-

Nevertheless, it cannot be expected that uranium production will be stimulated in the short term by higher prices. Reaching a promising price level may stimulate investment decisions, but there is no significant price sensitivity with regard to the realization time of these projects. The time required from the time of the investment decision cannot be significantly reduced with money. Rather, the time dimension is determined by the scope and complexity of the approval and planning processes.

## Which nations are now clearly ahead in the development of uranium projects and where are the bottlenecks?

Kazakhstan is the world's most important uranium producer. Together with its joint venture partners, the state controlled Kazatomprom accounts for around 42% of global uranium production. Other important producers are Canada (15%), Namibia (11%), Australia (9%) and Uzbekistan (7%).

It is important to realize that the major producers are not also major consumers. The largest reactor fleets are operated by the USA (93 reactors), France (56), China (55), Russia (37), Japan (33) and South Korea (26). This results in interesting trade relations and dependencies. Against the backdrop of the Ukraine war and the emerging bloc formation (Russia/China vs. Western industrialized countries), these also appear in a new light. The new hot topic is the security of uranium supplies.

This results in three noteworthy developments: 1. Kazakhstan is under observation. 2. the USA wants to significantly reduce its de-

pendence on imports and stimulate its own uranium production. 3. Africa is becoming a playing field for global players.

So far, Kazakhstan has managed the balancing act between East and West surprisingly well. Despite its proximity to Russia, the country has managed to avoid sanctions from the West with some diplomatic skill. However, the geopolitical situation presents the country with major logistical challenges. For example, it is no longer possible to ship uranium to Western customers via the previously most important export route via the port of St. Petersburg. The alternative delivery via the Caspian Sea, Azerbaijan and Georgia is logistically complex and uncharted political territory due to the lack of regulations. Deliveries to what is now the most important customer (China) and Russia are correspondingly easier. These two major powers are also increasing their political influence on the government of the country, Kazatomprom's most important shareholder. It is therefore to be expected that Kazakh uranium production will increasingly head east in the future. Despite the existing supply contracts, this is not an encouraging prospect for Western power plant operators. This situation could come to a head if Kazatomprom fails to achieve its ambitious production expansion targets in the coming

Against the backdrop of geopolitical changes, the USA has become increasingly aware of its own dependence on imports. With the world's largest reactor fleet, the country covers around 20% of its electricity requirements from nuclear power plants. There is no longer any significant domestic production, although the country was once a major uranium producer. In the meantime, however, a strong bipartisan consensus has been established in Washington to address this dependency quickly and in a targeted manner with various measures. A strategic uranium reserve is being established and domestic uranium and fuel production is being stimulated with various support measures. US mine production has a good chance of making a comeback in the coming years. Another beneficiary of US efforts is Canada. Large deposits with a high uranium content are located here ("Athabasca Basin" / Saskatchewan). The appetite of its neighbor and the prospect of further increases in uranium prices are stimulating exploration and the advancement of already established mining projects.

The prospects for European consumers are even less clear. Although there are also uranium deposits in Europe, their exploration and extraction is usually not permitted for political reasons (Sweden, Spain). France in particular is struggling in the new geopolitical constellation. Until now, it has covered a not insignificant part of its uranium requirements in Niger. This source dried up after last year's coup due to resentment from the colonial era. The new government has imposed an export ban on production from the French mines. The French are therefore actively seeking new mining rights in Uzbekistan and Mongolia.

The African continent has come more into focus in the current environment. Its uranium deposits are not firmly assigned to either of the two geopolitical blocs and there are numerous deposits that are being developed and mined by companies from China, Russia, Canada or Australia. However, because these uranium deposits are usually characterized by a rather low uranium content, many of these projects require high uranium prices in order to be economically viable. Accordingly, the rising uranium price is stimulating fantasies in this regard and driving activity. Important deposits are located in Namibia in particular. These are already being mined with Chinese support ("Roessing" / "Hussab"). There are also activities by Lotus Resources in Malawi. The "Kayelekera" mine is scheduled to go into production at the end of 2025. The other important producer on the continent is Niger, which has already been mentioned. Global Atomic is developing "Dasa", a major greenfield project here, which could go into production from the end of 2025 with a planned annual production of 5 million pounds. GoviEx is also pushing ahead with another project in the country, "Madaouela", which could go into production in 2026. However, these plans should still be treated with caution due to the political framework conditions under the new rulers.





In summary, it can be said that there is a fairly well-funded pipeline of promising uranium projects in the hotspots of Kazakhstan, the USA, Canada, Namibia, Niger and Mongolia. With a uranium price of around USD 100, these can be realized. But it will take time before these projects can make a significant contribution to global uranium production. The price sensitivity of the uranium market is obviously also low in terms of supply. At around 7 million pounds, these "newcomers" are likely to make only a marginal contribution to global uranium production in the current year. In the following year, this contribution is likely to double to around 15 million pounds. In the short term, a significant increase in uranium supply can only be realized in the Kazakh mines. Kazatomprom plans to increase production by a good 20 million pounds in the coming year. However, these ambitious plans of the market leader are being viewed increasingly critically by the market following the missed production targets of the previous year and the adjusted production plans for this year.

What is the current situation regarding the development of nuclear power outside of Germany, which is resistant to consultation? Who is currently driving the development of its nuclear power fleet in particular?

Against the backdrop of the global climate debate, governments around the world are looking for answers to the question of what their country's optimal energy mix should look like in the future. Geopolitical concerns, economic interests, national egoisms and the laws of nature (physics) all need to be taken into account. This is an extremely complex issue, because ultimately politicians must ensure that the energy and electricity supply for their national economies is clean, safe and affordable.

According to the goals of the Paris Climate Agreement, the energy supply should be based less on fossil fuels in the future. It is undisputed that the targeted electrification of industry and mobility will lead to a disproportionate increase in demand for electricity. Accordingly, alternative energies (wind, solar, hydropower) are to be greatly expanded.

In recent years, a great deal of time and commitment has been devoted to defining globally binding climate targets that are as ambitious as possible. Ideological and moral arguments have often played a major role in these discussions. This has changed considerably against the backdrop of the war in Ukraine and the resulting energy crisis. Questions about the availability and costs of energy supply are suddenly at the center of the political debate. Dependence on fossil fuel imports from Russia should be reduced as quickly as possible and energy supplies secured for the coming winters. The time for concrete energy policy implementation has therefore arrived. In this context, the limiting factors of time and money are beginning to take effect. Accordingly, realpolitik is increasingly taking the reins in the search for practicable energy policy compromises. The time of the energy policy pragmatists seems to be dawning...

All of these political approaches are based on the realization that the unavoidable fluctuations in the production of alternative energy sources must be balanced out in order to maintain a stable electricity grid at all times. This will continue to require reliable electricity generation from non-fossil sources that is available around the clock, seven days a week. Because nuclear power is produced with low CO, emissions, many governments see nuclear power plants as a possible solution for providing this base load in the electricity grid. Against this background, alternative energy sources and nuclear power can enter into a "green" symbiosis. In terms of energy policy, we do not see "alternative" versus "nuclear", but rather "low CO," versus "fossil".

Thanks to this green stamp, nuclear power plants will probably also benefit from economic stimulus programs and state aid in the future. A notable example of this is the "Inflation Reduction Act" in the USA. It also makes it easier to tap into investor funds. For Europe, the USA and Japan, we expect that this will make it easier to modernize existing nu-

clear power plants with the aim of extending their operating life. However, we do not expect numerous new projects for the construction of current-generation reactors. Japan is a special case in this context. In the coming years, the country will bring many of the reactors that were shut down after the Fukushima reactor accident back online. We see more potential for new reactor concepts that are safer, more flexible and cheaper than the current generation of nuclear power plants. The research funds required for this can now be mobilized more easily in the context described.

While the established industrialized countries are aiming to extend the operating life of existing nuclear power plants in the short and medium term, the focus in the emerging economies in the Middle East and Asia is on the accelerated expansion of reactor fleets. China is particularly ambitious in this regard. The country plans to build around 150 new reactors over the next 15 years! More than the rest of the world has built in total over the past 35 years. India is also pursuing very ambitious growth targets for the nuclear industry. Are these plans realistic? Only time will tell. The example of the United Arab Emirates is encouraging in this respect. There, under Korean project management, ambitious construction projects for new reactors have been successfully implemented and commissioned on schedule and within budget.

Overall, the prospects for nuclear energy have brightened considerably in the last two years. Visibility has improved significantly, particularly for power plant operators in western industrialized countries. Against the backdrop of political support and increased acceptance by the general public, planning security for operators has increased significantly. This will also be reflected in storage. More nuclear fuel will be stored again in order to safeguard the future operation of nuclear power plants. With the start of this new storage cycle, the opportunity/risk profile for the uranium sector is improving sustainably. The significant price increase on the physical uranium market in recent months should be seen against this backdrop.

Where have China and Russia on the one hand and the "West" on the other sourced their raw uranium and processed uranium to date and to what extent could this change in the future? Will we really see a division of the uranium sector into "West" and "East" in the coming years?

The operation of nuclear power plants requires an extensive infrastructure to ensure the supply of fuel. The mining of uranium ores, the extraction of uranium from the ores, the conversion and enrichment as well as the production of fuel elements must be taken care of. Anyone who wants to understand the behavior of the players on the uranium market must have the entire value chain (fuel cycle) in mind and be aware that we are dealing with a very long-term business.

Security of supply is a key issue for the operators of nuclear power plants. One of the reasons for this is the cost structure of these power plants. In contrast to fossil-fuel power plants, capital costs are the dominant factor in the total cost calculation for electricity production in the case of a nuclear power plant. With a share in the high single-digit percentage range, fuel costs (uranium) are of subordinate importance. Accordingly, the industry is usually not very sensitive to rising uranium prices. However, if an operator invests billions in the construction of a nuclear power plant, it also wants to operate it around the clock, seven days a week. A possible bottleneck in the fuel supply must be prevented accordinaly.

The war in Ukraine has significantly changed the perception of Western governments and power plant operators. This raises questions about possible dependencies and the reliability of contractual partners. Russia is not only a uranium producer, but with "Rosatom" also a major player in the conversion and enrichment of uranium as well as in fuel production. The country holds significant market shares in these areas. However, because around 70% of the global reactor fleet is located in Western industrialized countries, but these only hold around half of the capacities in conversion, enrichment and fuel production, there is





"As the quarterly reports of the Canadian uranium producer "Cameco" have already shown, power plant operators are showing an increased willingness to stockpile uranium. This should mark the start of a new stockpiling cycle on the demand side. In our opinion, this is the central piece in the mosaic of a multi-year and sustainable uranium bull market."

a strong dependency on Russia from a Western perspective.

Accordingly, western power plant operators are currently focused on securing some of this scarce capacity in the western world on a contractual basis. The price trend observed in this area of the fuel cycle clearly shows how tight the downstream market currently is. From a Western perspective, this situation can only be alleviated by creating new capacities within its own sphere of influence. However, these investments in the billions will only be made if they are sustainable for the operators. State investment guarantees and long-term supply contracts are the answer to this question.

Against the background outlined above, we expect massive structural shifts in the uranium market in the medium term: on the one hand, Western power plant operators will seek to diversify their sources of supply and conclude long-term supply contracts with suppliers from politically reliable jurisdictions. A willingness to self-sanction can already be observed today. Western power plant operators are doing their best to avoid purchasing enriched uranium and nuclear fuels from Russian sources. This is leading to a geopolitically driven division of the uranium market (bifurcation), which will also be reflected at the

mine production level. Accordingly, we expect that a larger share of Kazakhstan's uranium production will find its way to China and Russia in the future. The growing involvement of these two major powers is already reflected in numerous joint ventures for uranium production and in extensive long-term supply agreements. On the other hand, Western consumers will mainly want to cover their needs from mines in Canada, Australia and the USA.

In addition, power plant operators will also address the issue of strategic security of supply with more extensive stockpiling. As the quarterly reports of the Canadian uranium producer "Cameco" have already shown, power plant operators are showing an increased willingness to stockpile uranium. This should mark the start of a new stockpiling cycle on the demand side. In our opinion, this is the central piece in the mosaic of a multiyear and sustainable uranium bull market.

The structural deficits in the fuel cycle described above are likely to keep the uranium market busy for years to come. This initial situation differs significantly from that at the start of the last major uranium bull market (2004-2010). Despite this promising starting position, it should be noted once again at this point that the adjustment processes in this long-term business are slow and take time.

## What is your personal outlook for the uranium sector at the moment?

My positive medium to long-term view of the uranium market is reflected in the investment strategy of the uranium resources fund (ISIN LI0224072749) that I manage. The strategy is based on the investment hypothesis described above: the supply deficit on the uranium market will be closed over the next three to five years by a higher uranium price. This will provide the incentive to commission new production capacities and thus bring the uranium market into a new equilibrium. In view of the growing supply gap and the further improvement in the fundamental data, there are good prospects for a continuation of the bull market despite the price gains to date. However, temporary setbacks and high volatility remain a characteristic of this narrow market. We intend to consistently exploit the profit opportunities that present themselves while accepting controlled risks!

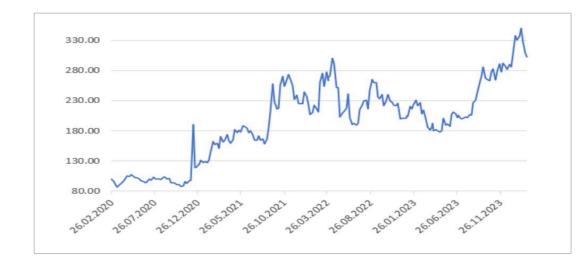
Against this backdrop, our portfolio rests on four pillars. As the first pillar, we maintain a strategic liquidity ratio of up to 5% in a normal market environment. This ensures our ability to act at all times. This allows us to take advantage of attractive entry points that regularly open up due to the volatile performance of many uranium stocks.

With the second pillar, we want to participate directly in an improvement in the uranium

spot price. The core of the portfolio consists of two investment companies and an actively managed certificate that have invested their funds primarily in physical uranium.

The third pillar focuses on the shares of uranium producers and on the group of "standby" producers with approved and realized projects that are not yet in production. In the current environment, those who can place significant uranium production on the market in the foreseeable future stand to benefit. These producers contribute to the stability of the portfolio with their extensive order book of long-term supply contracts.

As part of the fourth pillar, we focus on explorers and project developers who are advancing development and mining projects at a world-class level. These are particularly interesting if they can significantly advance their projects in the time window of the expected supply gap (late-stage development). They will then be able to benefit from a correspondingly attractive performance of their projects. In addition, these assets should have the necessary size to qualify as takeover targets. We assume that a wave of consolidation will take place in the sector over the course of this uranium bull market and that mining companies from outside the sector may also want to position themselves in the uranium business. This would make sense, not least because of the low sensitivity to the economy and the comparatively high visibility of uranium demand.



Performance of EUR share class "B" of the Incrementum uranium resources fund from 02/02/2020 to 02/28/2024. (incrementum)

### **Fission Uranium**

### On track to start mining before 2030



Fission Uranium Corp "FCU" is a Canadian uranium development company that made one of the best uranium discoveries of all time and is advancing on schedule to production by 2029. The PLS Project is not only one of the largest uranium projects in the world, but also one of the highest grades, and is located at a shallow depth below the surface. Under the leadership of CEO and uranium expert Ross McElroy, FCU has assembled one of the most experienced uranium mine development teams of its peer group. The company completed a feasibility study in early 2023 showing that Triple R would be one of the lowest operating cost uranium mines in the world. Fission Uranium continues to meet development milestones on time and on budget and is ideally positioned to advance the project through the permitting, construction and inclusions phases to production. As one of very few advanced stage uranium projects in the world, PLS has the potential to be brought into production before 2030.

## PLS – Location, discovery and infrastructure

The PLS project is located in the south-western part of the Athabasca Basin, just outside the (current) basin margin. It is important to note that all uranium production currently takes place in the eastern part of the basin on Key Lake, Rabbit Lake, MacArthur River and Cigar Lake. The western part of the Athabasca Basin, on the other hand, is heavily underexplored, but greatly benefits from a government-maintained highway that runs through Fission's PLS property up to the past producing Cluff Lake uranium mine just 80 kilometers further north of PLS. Fission Uranium's CEO Ross McElroy is an award-winning geologist and mining executive with over 35 vears of experience in the industry. He previously worked for AREVA, which discovered the Shea Creek deposit, which is located ~80km north of PLS and hosts a resource of nearly 100 million pounds of U.O.. This discovery was reason enough for McElroy to believe in the potential of the western part of the basin

While most of the deposits and past production in the Athabasca Basin are of a type called "unconformity deposits" (sedimentary deposits occurring at the base of the sandstone), there are also a few "basement hosted" deposits, which are typically situated in the crystalline rock beneath the Athabasca Basin. In the case of the PLS property, the Triple R deposit is located outside of the Athabasca Basin. FCU's interpretation is that the basin was larger at the time of the deposit formation than as seen today. After carrying out a radiometric study, which revealed a very large area of radioactivity, mineralization was found that contained up to 10% U<sub>2</sub>O<sub>6</sub> - a very high-grade material. The material there was distributed over several kilometers by glacial transportation during the last ice age. FCU then traced back up-ice direction to the source of the uranium. All this led to the first discovery in November 2012, when the very first drill hole hit the PLS deposit. The overburden is only 50 meters deep at this location. All these findings led to extensive drilling programs and today's Triple R deposit stretches over 3.2km in strike length, with parts of the orebody exceeding uranium concentrations of well over 20%.

## PLS - Drilling successes (a small selection)

Fission Uranium has had countless spectacular drilling successes at Patterson Lake South to date. For example, a continuous mineralization of 108 metres with an average of 8.46%  $\rm U_3O_8$  was encountered. This included an 8.5-meter-long intersection with a sensational 27.66%  $\rm U_3O_8$ , one of the highest uranium grades ever recorded worldwide. Other high-caliber intercepts include 8.0 meters with 22.28%  $\rm U_3O_8$ , 4 meters with 21.93%  $\rm U_3O_8$ , 1.5 meters with 22.36%  $\rm U_3O_8$ , 15.5 meters with 23.89%  $\rm U_3O_8$  and 5.5 meters with 26.03%  $\rm U_3O_8$ . All of these sections were included in much longer sections.

#### PLS - Resource

PLS has an exceptionally large reserve and resource base. To date, FCU has estimated 114.9 million pounds of  $\rm U_3O_8$  (average grade: 1.94%  $\rm U_3O_8$ ) at indicated classification and 15.4 million pounds of  $\rm U_3O_8$  (average grade: 1.10%  $\rm U_3O_8$ ) in the inferred category. Mining reserves of 93.7 million pounds of  $\rm U_3O_8$  (average grade: 1.41%) have been estimated. The majority of the resources come from the high-grade R780E zone with average grades of more than 20%  $\rm U_3O_8$  in some cases. It is important to note that the mineralized zones remain open in multiple directions.

#### PLS - Feasibility Study

In January 2023, Fission Uranium published a feasibility study demonstrating that the deposit is economically viable. The mine design assumed underground mining with a 1,000 tpd processing plant and a high efficiency, small environmental footprint, with a surface tailings management facility. On this basis, initial capital costs were calculated at CA\$1.155 billion with further capital costs over the life of mine of CA\$384 million. All-in sustaining costs were estimated at a very low CA\$18.06 per pound of U<sub>3</sub>O<sub>8</sub>. Over the entire mine life of 10 years, an average of 9.1 million pounds of U<sub>3</sub>O<sub>8</sub> could be produced per year. The construction period was estimated at 3 years.

Assuming a base case uranium price of US\$65 per pound of  $\rm U_3O_8$ , an after-tax IRR of 27.2%, an 8% discounted after-tax net present value (NPV8%) of CA\$1.20 billion and an average annual EBITA of CA\$540 million over the life of the mine were calculated. The after-tax repayment period for this case would be only 2.6 years.

It is interesting to take a look at the sensitivity analysis. Based on a currently still quite conservative uranium price of US\$ 75 per pound of U<sub>3</sub>O<sub>8</sub>, an after-tax IRR of 31.6%, an after-tax NPV8% of CA\$ 1.57 billion and an average annual EBITA of CA\$ 630 million over the entire mine life were calculated.

Based on a quite realistic uranium price of US\$ 100 per pound of U<sub>3</sub>O<sub>8</sub>, an after-tax IRR of 40.7%, an after-tax NPV8% of CA\$ 2.47 billion and an average annual EBITA of CA\$ 870 million over the entire mine life were calculated.

## PLS – Upcoming plans and catalysts

2024 will be a very busy year for FCU. The company has set itself the goal of achieving a whole series of milestones in order to reach the targeted construction start in 2027

The draft Environmental Impact Statement (EIS) was submitted to the Province of Saskatchewan in early March 2024. This represents an assessment of the potential environmental and socio-economic impacts of the PLS project. The Feasibility Study, released in January 2023, addressed many of the required mitigation measures and the updated mine plan from the FS was included in the EIS. A very important advantage for FCU is that the company only needs provincial approval for its EIS. The Company's direct peers in the Basin require separate provincial and federal approvals, which takes more time and more money.

The Front-End Engineering Design (FEED) phase began in June 2023 and is expected to be completed in June 2024. The design documentation prepared as part of the FEED phase will enable Fission Uranium to submit the license application for the construction of a mine and mill facility to the federal regulator, the Canadian Nuclear Safety Commission (CNSC). In addition, the documentation will enable the Company to file a construction permit with the Province of Saskatchewan to commence initial construction, subject to environmental assessment approval and a ministerial decision.

The detailed engineering phase is expected to commence in July 2024 and will advance the design of the mine, mill and associated infrastructure to the start of construction. At





the end of this phase of the project the timing should coincide where FCU expects to receive construction approval for the project from the CNSC and will have the necessary documentation in place to finalize the application to operate a mine and mill facility.

Community engagement is ongoing and will continue throughout the life of the project. This year, Fission Uranium will continue with meetings to discuss the findings and mitigation plans as stated in the draft EIS. Fission will continue to expand its community investment program in 2024 and aims to support communities with cultural programs, youth initiatives, health and wellness, and community development. Engagement and capacity agreements with the potentially impacted indigenous rightsholders have already been signed in 2023.

On the exploration / delineation side, infill drilling will be carried out specifically in the high-grade R1515W zone, the westernmost zone of the Triple R deposit, to upgrade and convert the inferred resource to a majority indicated resource classification. The goal is to incorporate the R1515W zone into the current mine plan to provide the PLS project with additional reserves and a longer mine life. A separate regional winter exploration

drilling program, initially comprising ~6,000 meters, was launched in January 2024.

## Summary: High news flow and milestone achievement guaranteed, financing of \$75 million secured

FCU's PLS project is already at an advanced stage and is one of the very few high-grade uranium projects in the world with the potential to go into production before 2030. 2024 is an extremely important year, as a whole series of important milestones are on the agenda, which could already lead to a pre-construction phase. In addition to the actual mine development, the company is working in parallel on the development of the reserve and resource base in order to remove any residual risk from the project. The fact that the management team led by the highly experienced uranium geologist Ross McElroy enjoys the trust of investors is demonstrated by the fact that Fission Uranium was able to finance an impressive CA\$75 million in fresh funds in February 2024. This means that the preliminary work up to the start of construction is now fully financed.



Ross McElroy, CEO

## **Exclusive Interview with Ross McElroy, CEO of Fission Uranium**

## What have you and your company achieved in the past 12 months?

The past twelve months have been very productive for Fission Uranium and for our PLS high-grade uranium project. We filed our Feasibility Study in March 2023, which confirmed our potential to become one of the lowest operating cost uranium producers in the world. Soon afterwards, we submitted our Federal application with the Canadian Nuclear Safety Commission (CNSC) for the mine and mill construction license. Since

then, we have expanded our inhouse development team, which includes some of the most experienced uranium mining and processing experts in the sector, and they have rapidly progressed PLS through the Front End Engineering Design (FEED).

Most recently, we submitted our draft Environmental Impact Statement (EIS) to the Province of Saskatchewan. This is a huge milestone because the EIS contains years of environmental studies, analysis and management and mitigation planning. Once we have obtained approval from the province, we are

officially in the licensing phase and, once we have our licenses, we can construct the mine and mill at PLS.

### What are the most important catalysts for the next 6 to 12 months?

We are hopeful for EIS approval this calendar year. Unlike our peers who need separate approvals from the Province and the Federal Government, we only need Provincial approval, which is a major cost and time saver. We also expect to complete our FEED work in the next few months and commence Detailed Engineering Design. This is the final design phase before construction can begin and it goes hand-in-hand with licensing.

We will also be drilling the westernmost of the Triple R deposit's high-grade zones (R1515W) which is not currently in our mine plan. We have already outlined a ten-year mine life at PLS but this only includes three of our five high-grade zones. The R1515W and the R1620E zones are located on the western and eastern side of the current mine plan and have the potential to be converted from inferred category to indicated category resources and added to the mine plan. It's important to add that all of our mineralized zones at PLS are open in multiple directions, so there remains very significant potential for resource growth.

There may also be further regional exploration drilling programs during this time. Only fifteen percent of the PLS project has been systematically explored. PLS is a very large property, and we believe strong potential exists for another major discovery.

### How do you see the current situation on the market for uranium?

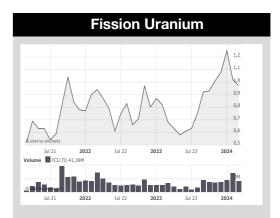
The uranium market remains in a very strong position. While there has been a recent pull-back after months of strong spot price growth, pricing remains historically high. Most importantly, global supply and demand fundamentals, driven by unstoppable trends such as energy security and clean energy demand, mean that nuclear energy will con-



Fission Uranium's PLS project demonstrates the potential to be one of the lowest operational cost uranium mines in the world.

(Fission Uranium)

tinue to grow steadily over the coming years. As it does so, uranium supply needs to increase dramatically with an emphasis on safe jurisdictions garnering the most attention. There are very few advanced uranium development projects currently in the pipeline, which means the forecast for uranium prices is extremely positive.



ISIN: CA33812R1091 WKN: A1T87E FRA: 2FU

TSX: FCU

Fully diluted: 865.7 million

#### **Fission Uranium Corp.**

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### **IsoEnergy**

## Highest grade uranium deposit in Canada and soon in production

IsoEnergy is a Canadian mining development company specializing in the development of uranium deposits. Its focus is on the Athabasca Basin and the US state of Utah, where it has already had spectacular drilling successes and plans to put one or more former mines back into operation in the near future. Some of the Iso team have also held management positions at NexGen Energy in the past and were responsible for the discovery of the Arrow deposit, which is considered one of

the largest uranium deposits in Canada.

#### **Larocque East**

IsoEnergy's Canadian flagship project is called Larocque East and consists of 39 mineral claims totaling 19,699 hectares. Larocque East is located 35 kilometers northwest of Orano Canada's McClean Lake uranium mine and mill and is almost immediately adjacent to the northern end of IsoEnergy's Geiger uranium project. The project area covers a 15-kilometer northeast extension of the Larocque Lake conductor system, which hosts several deposits.

#### Larocque East - Hurricane Zone

The so-called Hurricane Zone, which is located in the southern part of the project site, only about 330 meters below the earth's surface and runs flat, is home to one of the highest-grade uranium deposits on the planet. The absolute breakthrough was achieved by the IsoEnergy team with the 2020 drilling program, which revealed some of the most spectacular uranium grades achieved to date in the Athabasca Basin. Among other things, 24.0% U<sub>2</sub>O<sub>6</sub>, 2.7% nickel and 0.5% cobalt over 1.5 meters were encountered. Another drill hole returned 33.9% U<sub>2</sub>O<sub>2</sub> over 8.5 meters, including 5.0 meters of 57.1% U<sub>2</sub>O<sub>2</sub> and 2.0 meters of 62.8% U<sub>2</sub>O<sub>2</sub>. A third yielded 19.6% U.O. over 8.5 meters, including a 2.5-meter section with 63.6% U<sub>2</sub>O<sub>2</sub> and 1.5 meters with an incredible 76.7% U.O. Finally, in March and April 2020, another 20.5% U<sub>2</sub>O<sub>2</sub> over 4.0 meters was reported, including 1.5 meters with 53.8% U<sub>2</sub>O<sub>2</sub>, 0.5 meters with

64.9% U<sub>3</sub>O<sub>8</sub> and 2.5 meters with 67.2% U<sub>3</sub>O<sub>8</sub>. It is important to note that some of the worldclass drill holes mentioned are up to 100 meters apart. The very high-grade mineralization has widths and thicknesses similar to those found in large deposits - up to 12 metres thick and 125 metres wide. In 2022. IsoEnergy published an initial resource estimate for Larocque East. According to this, the project hosts at least 48.6 million pounds of U<sub>2</sub>O<sub>6</sub> in the Measured and Indicated categories, with an average grade of 34.5% U<sub>3</sub>O<sub>8</sub>. The project continues to offer high exploration potential and is currently being tested with additional drilling (approximately 3.150 meters).

## Tony M + Daneros + Rim + Sage Plain - Planned recommissioning

The past producing mines are primarily the Tony M Mine, a large, fully developed and permitted underground mine that was last operated in 2008 and has approximately 8.8 million pounds of U<sub>o</sub>O<sub>o</sub> (high grades averaging 0.27%) according to a new resource estimate. Tony M is located approximately 200 kilometers from Energy Fuels White Mesa Mill - which opens up the possibility of toll milling - and has high exploration potential. In February 2024, IsoEnergy announced its strategic decision to reopen underground access to the Tony M uranium mine in the first half of 2024, with the goal of restarting uranium production operations in 2025 if market conditions continue as expected.

The Daneros Mine, a fully developed and permitted underground mine that was last in production in 2013 and is located approximately 113 kilometers from the White Mesa Mill, only hosts approximately 200,000 pounds of  $\rm U_3O_8$ , but has a disproportionately higher resource potential. There is the potential for additional resources, as demonstrated by the historical mineral resources at Lark and Royal.

The third mine, Rim, a fully developed and permitted underground mine that last operated in 2009, has 0.4 million pounds of  $U_3O_8$  and 3.5 million pounds of  $V_2O_8$  and is located



100 road miles from the White Mesa Mill. The company also has the Sage Plain project, which is located only about 87 kilometers from the White Mesa Mill and contains around 800,000 pounds of  $\rm U_3O_8$  and 6.7 million pounds of  $\rm V_2O_5$ .

#### Coles Hill - Virginia/USA

Coles Hill is considered the largest known undeveloped uranium resource in the U.S. with 132.9 million pounds of U<sub>3</sub>O<sub>8</sub> in historical indicated resources and 30.4 million pounds of U<sub>2</sub>O<sub>2</sub> in historical inferred resources. The project covers approximately 3,000 acres and hosts two deposits, Coles Hill North and South. The mechanism of uranium deposition at Coles Hill is similar to that in the Athabasca Basin, as evidenced by the presence of the alteration minerals hematite, epidote and chlorite. The depositional mechanism in the Athabasca Basin has produced highgrade uranium mineralization that may also occur in the untested deeper parts of the Coles Hill deposit.

#### Matoush - Quebec/Canada

The Matoush project has historical Indicated Mineral Resources of 12.329 million pounds of  $\rm U_3O_8$  and Inferred Mineral Resources of 16.44 million pounds of  $\rm U_3O_8$ . It is at an advanced stage, with an updated Preliminary Economic Assessment of the property released in April 2010, which envisioned access via a down-dip ramp and mining using long-hole methods followed by cemented rock fill. Matoush has good exploration potential as many of the zones of mineralization within the historic mineral resources are open along strike and at depth.

## Ben Lomond/Georgetown – Queensland/Australia

The two projects Ben Lomond and Georgetown are located in the north-east of Australia, around 50 and 350 kilometers from Townsville respectively.

Ben Lomond has historic resources of 10.7 million pounds of  $\rm U_3O_8$ , with the deposit open to the east over a strike length of at least 1.05 kilometers.

Georgetown hosts a resource of 6.3 million pounds of  $\rm U_3O_8$ . It is worth noting that Ben Lomond and Georgetown have relatively high average grades of over 2,100 and over 1,000ppm respectively.

#### Milo - Queensland/Australia

The Milo project consists of approximately 34 square kilometers and is located in the Mt Isa Inlier approximately 40 kilometers west of Cloncurry in northwest Queensland. The Milo deposit is a large IOCG breccia system that hosts base and precious metal mineralization. Drilling has delineated continuous uranium, copper and rare earth mineralization over a strike length of 1 kilometer and a width of up to 200 metres. A 2012 drill program intersected some high-grade copper mineralization, including 2 metres of 6.19% copper in one of the southernmost holes drilled.

#### Mountain Lake - Nunavut/Canada

The Mountain Lake project covers 5,625 hectares and is located in the west of the Canadian province of Nunavut, not far from the border with the Northwest Territories. There have been 220 holes drilled by previous operators, identifying potential for higher grades (up to 5.18%, but never followed up). Mountain Lake has a historical resource of 8.2 million pounds of U<sub>3</sub>O<sub>8</sub>, with average grades reported at 2,300ppm.

#### Laguna Salada – Argentina

The Laguna Salada uranium and vanadium project is located in the Chubut province in southern Argentina. The former owner U<sub>3</sub>O<sub>8</sub> Corp. has already invested over 15 million dollars in the project. An initial resource estimate was published in May 2011. This showed that Laguna Salada has 10.2 million pounds





of  $\rm U_3O_8$  and 83.9 million pounds of  $\rm V_2O_5$ . However, the project has further significant resource growth potential.

#### Dieter Lake - Quebec/Canada

The Dieter Lake project covers 8,105 hectares and is located in the northeast of the Canadian province of Quebec. The project hosts a known historical resource of 24.4 million pounds of  $U_2O_8$  in the inferred category.

#### Geiger + Hawk - Eastern Athabasca Basin

In addition to Larocque East, IsoEnergy owns a number of other top projects in the Athabasca Basin, of which Geiger and Hawk stand out in particular.

Located south of Larocque East, Geiger has several mineralized intercepts, including high-grade basement mineralization with up to 2.74%  $\rm U_3O_8$  over 1.2 metres. The project has high potential for a fully undrilled 4-kilometer-long conductor on the east side of the property.

Hawk covers approximately 6,000 hectares and is located 37 kilometers west of Larocque East. Drilling is underway over 5,100 meters to test an electromagnetic anomaly spatially associated with elevated radioactivity.

## Summary: Increased news flow guaranteed by drilling campaign and production decision

The experienced management team around CEO Phil Williams has created a uranium player in IsoEnergy that has two very hot irons in the fire. Larocque East is one of the world's highest-grade uranium projects, which will be further upgraded and expanded in the current drilling program (together with Hawk). At the same time, the company owns Tony M, a former mine that is to be put back into operation as early as next year. An increased news flow is therefore guaranteed. The company was able to generate CA\$ 23 million in fresh capital in February 2024, with the financing being far oversubscribed. This will be sufficient for the upcoming programs.



Philip Williams, CEO

## Exclusive interview with Philip Williams, CEO of IsoEnergy

### What have you and your company achieved in the past 12 months?

IsoEnergy has undergone a transformational change in December 2023, resulting from its merger with Consolidated Uranium. The Company is now globally diversified across top uranium mining jurisdictions in Canada, the U.S., Australia, and Argentina with projects in varying stages of development, providing near, medium, and long-term leverage to rising uranium prices. The Company also completed several successful financings, providing a strong treasury for advancement

with approximately \$55 million in cash and \$20 million in equity holdings in other uranium companies and boasts an incredibly strong register of corporate and institutional investors including NexGen Energy (34%), Energy Fuels (5%), Sachem Cove (3%), Mega Uranium (2%) and several ETFs.

Importantly, the Company is actively advancing key assets in the portfolio including:

► The Larocque East Project in Canada's Athabasca Basin, which is host to the Hurricane deposit, the world's highest

grade Indicated uranium Mineral Resource at 48.6m lbs U3O8 at an average grade of 34.5%. Winter drilling is currently testing new targets identified to the east of the deposit which could prove that Hurricane has a larger spatial footprint, as seen at other unconformity deposits. Drilling is also underway at the Hawk Project located 40km west of the Hurricane deposit, which has additional tier one discovery potential.

▶ The Tony M Mine is one of three past-producing, fully permitted uranium mines in Utah owned by IsoEnergy, and is a largescale, fully developed and permitted underground mine that previously produced nearly one million pounds of uranium during two different periods of operation, from 1979 to 1984 and from 2007 to 2008. IsoEnergy made a strategic decision to reopen access to the underground in the first half of 2024 (H1 2024), with the goal of restarting uranium production operations in 2025, should market conditions continue as expected. The decision to advance Tony M is underpinned by rising uranium prices, the climate of increasing support and demand for nuclear energy, and the announcement by Energy Fuels Inc. (EFR) to restart its uranium circuit at the White Mesa mill, with which IsoEnergy has a toll milling agreement.

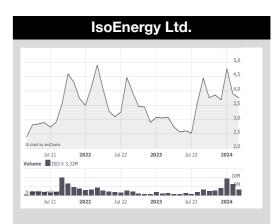
### What are the most important catalysts for the next 6 to 12 months?

Important catalysts include results from winter drilling at Larocque East and Hawk to guide a summer follow up drill programs in the Athabasca Basin as well as the opening of the Tony M mine and associated work program which will facilitate an economic study ahead of anticipated production in 2025, should market conditions permit.

We will also look to advance additional projects in the portfolio through smaller work programs and continue our M&A strategy which has helped to create the new IsoEnergy.

### How do you see the current situation on the market for uranium?

The world's view toward nuclear's importance in the fight against climate change, and in providing energy security has led to strengthening commitments to nuclear energy growth globally. This increasingly positive outlook for future demand, coupled with a uranium production and inventory pipeline that has been under immense strain over the past decade, has created strong near and long-term market fundamentals for uranium that are continuing to strengthen. The uranium spot price has seen some volatility recently, but mainly as a result of a lack of activity with buyers having stepped back following significant price increases in recent months. More importantly. the long-term uranium price has continued to increase steadily. What is clear is that the nuclear industry is going to need all the uranium that is currently being produced and under development, including Tony M, as well as new, high-quality projects, such as Larocque East, in order to meet future demand.



ISIN: CA46500E1079 WKN: A2DMA2

FRA: 101 TSX-V: ISO

Fully diluted: 200.2 million

#### IsoEnergy Ltd.

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### **Purepoint Uranium**

## Extensive exploration campaigns on promising projects with top partners



Purepoint Uranium is a Canadian mining exploration and development company focused on the development of high-caliber uranium proiects in Canada's Athabasca Basin. The company takes an aggressive, systematic approach to identifying key projects with solid indicators and historical significance in the Basin. Purepoint Uranium also works with two of the largest uranium producers in the world, Cameco Corporation and Orano Resources Canada, which makes it easier to land significant new discoveries through extensive exploration programs. One of the projects has also been optioned to Foran Mining, which could bring the company more than CA\$ 10 million. Purepoint is currently working on several drilling campaigns, which should lead to significant discoveries in the near future.

## The focus is on the eastern part of the Athabasca Basin

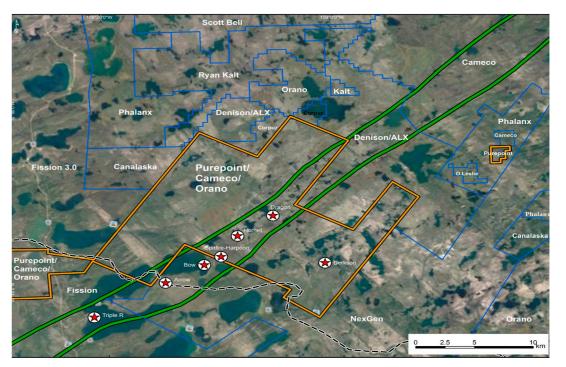
Since 2002, Purepoint Uranium has acquired and explored over 500,000 hectares of property throughout the Athabasca Basin, quickly and efficiently abandoning the least prospective projects. What remains is a portfolio of well-understood projects with dozens of clearly defined, uranium-bearing targets. The company currently holds a total of 10 projects in the east of the Athabasca Basin. In addition, there are two further projects in the southwest of the basin, including the current flagship Hook Lake project.

#### **Hook Lake**

Located in the Patterson Uranium District, the Hook Lake project is jointly owned by Cameco Corporation (39.5%), Orano Canada Inc. (39.5%) and Purepoint Uranium (21%), with Purepoint Uranium being the operator of Hook Lake and receiving a 10% management fee. The project consists of nine claims totaling 28,598 hectares, including the high-grade Spitfire discovery, which

has already returned phenomenal uranium grades of 53.3% U<sub>2</sub>O<sub>2</sub> over 1.3 metres, within a 10-metre interval of 10.3% U<sub>2</sub>O<sub>2</sub>. The depth of the unconformity in this area of the Athabasca Basin is very shallow, ranging from zero to 350 meters. Three prospective structural corridors have been defined at Hook Lake, with each corridor consisting of multiple electromagnetic conductors confirmed by drilling and sourced from prospective graphitic shear zones. Patterson is one of these structural corridors that extends along the southwestern margin of the Athabasca Basin for at least 50 kilometers and hosts Fission Uranium's Triple R deposit, NexGen's Arrow deposit and Purepoint Uranium's Spitfire discovery, among others.

During 2023, Purepoint Uranium conducted drilling in one of the most interesting areas of Hook Lake, the Carter Corridor. This involved 2,710 meters of diamond drilling in six holes to test the Carter Corridor. Drill hole CRT23-05 returned a peak radioactivity of 8,850 counts per second (cps) with three intercepts of anomalous radioactivity over 34.8 meters. including 0.9 meters of 3,950 cps and 2.2 meters of 1,660 cps. The Company also intersected 0.08% U<sub>2</sub>O<sub>2</sub> over 0.4 meters. Drill hole CRT23-06, a 100-meter extension of CRT23-05 to the south, returned a peak radioactivity of 3,225 cps in an anomalous radioactive zone averaging 1.745 cps over 3.1 meters. The Carter Corridor is a longlived, reactivated graphitic fault zone that runs between the granitic intrusions of the Clearwater Domain to the west and parallel to the Patterson structural corridor to the immediate east. The 25-kilometer strike length of the Carter structural/conductive corridor is located almost entirely within the Hook Lake JV project and is also very close to the Clearwater Domain, a hydrothermal heat source. A 2019 airborne gravity survey funded by the Targeted Geoscience Initiative has returned results suggesting that uranium deposits can form near gravity highs. In February 2024, a drill program of approximately 2,500 metres of diamond drilling commenced



Hook Lake is in the midst of significant uranium discoveries (Purepoint Uranium).

in five holes testing the Carter Corridor. The program follows on from the successful drill hole CRT23-05.

#### **Red Willow**

In addition to Hook Lake, Purepoint Uranium is currently investigating a second potentially high-caliber uranium project for corresponding deposits. This is called Red Willow, comprises 22 claims totaling approximately 40,000 hectares, is 100% owned by the company and is located in the extreme northeast of the Athabasca Basin, 10 kilometers northeast of Orano's JEB Mine and east of Cameco's Eagle Point Mine. The detailed airborne VTEM survey conducted by Purepoint Uranium at Red Willow returned magnetic results that provide an excellent basis for interpretation of the structures. while electromagnetic results outlined over 70 kilometers of conductors, most of which represent favorable graphitic lithology. A total of twenty-one conductive zones were identified as priority exploration targets, of

which only seven were drilled in the first pass. Purepoint Uranium ultimately identified 8 areas at Red Willow that could host potential uranium deposits. As part of the 2022 winter drilling program, 1.2 kilometers of uranium mineralization was intersected in the Osprey zone. Near-surface uranium intercepts of up to 0.47% U<sub>2</sub>O<sub>2</sub> were intersected. The best hole to date was drilled in 2019 and contained 0.19% U.O. over 4.0 meters and 3.03% U.O. over 0.1 meters. In 2023. 15 holes drilled 3,854 meters of diamond drilling in the Osprey, Geneva and Radon Lake zones at the Red Willow project. Plans for a drill program have been finalized. Drilling will initially focus on the Long Lake area where more than 5 kilometers of favorable EM conductor remains to be drill tested.

#### **Tabbernor**

The Tabbernor project has been staked along three major trends of the Tabbernor fault system, a deep-seated, 1,500-kilometer-long crustal shear system that runs



## **Exclusive interview with Chris Frostad, CEO of Purepoint Uranium**



north through the Athabasca Basin. The system hosts over 80 historic mines and gold deposits and also intersects the basin's mine trend and is associated with eight of the basin's largest uranium discoveries. The Tabbernor project consists of 31 claims totaling 70,598 hectares. The original block of three north-south trending claim groups (23 claims) covering the Tabbernor structures has now been supplemented by a further 8 claims covering a strong east-northeast trending belt of conductive rocks. Purepoint completed a 2,667 line-kilometer MobileMT airborne geophysical survey in 2023 focused on the 50-kilometer graphitic corridor that intersects the project. In addition, a detailed ground geochemical survey was completed covering approximately 2.5 kilometers of the electromagnetic conductor within a prospective area. The company then staked an additional 8,865 hectares on the eastern boundaries of the project. During the summer months of 2024, the Company intends to conduct an airborne gravity survey over the potential high interest target zones identified on the Tabbernor project in 2023.

#### **Turnor Lake**

Purepoint Uranium's 100% owned Turnor Lake project consists of four claims totaling 9.705 hectares in the eastern portion of the Athabasca Basin. The company has defined four distinct exploration areas there - the Serin conductor, the Laysan zone, the Turnor Lake zone and the Turaco zone. The Serin conductor lies within the La Rocque corridor, which hosts Orano's Alligator project (3.8% U<sub>0</sub>O<sub>0</sub> over 10.5 meters), Cameco's La Rocque deposit (29.9% U<sub>2</sub>O<sub>2</sub> over 7.0 meters) and IsoEnergy's Hurricane zone, which returned 38.8% U<sub>2</sub>O<sub>2</sub> over 7.5 meters, among others. The Lavsan zone hosts, among others, the historic drill hole OD-1, which returned 0.06% U<sub>o</sub>O<sub>o</sub> over 3.4 meters. The Turnor Lake Zone is a target associated with numerous highgrade showings to the south, including 2.7% U<sub>2</sub>O<sub>0</sub> over 1.2 meters at Orano's property.

Extensive geophysical surveying and initial drilling has been completed at the Turaco Zone by Purepoint Uranium. Turnor Lake is primarily associated with the Kelsev Dome Granite, a magnetic high in the shape of a cog surrounded by clusters of graphitic conductors and numerous high-grade uranium occurrences. The La Rocque Uranium Corridor bisects the northern portion of the project area and lies along the western margin of the Kelsey Dome Formation. Extensive geophysical programs have enabled Purepoint Uranium to outline approximately 34 kilometers of conductor throughout the Turnor Lake Project, Turnor Lake is scheduled for drilling in late Q3 2024. Drilling will target the 2.3-kilometer Serin EM conductor, which lies on trend with IsoEnergy Ltd.'s Hurricane deposit, and will also test the Turaco East conductor. The Serin Lake conductor remains prospective and has not yet been tested to the northeast. Drilling is also planned for the Turaco East conductor.

## Summary: High news flow expected due to several exploration campaigns

Purepoint Uranium has assembled a unique portfolio of uranium projects in the Athabasca Basin during a largely prevailing downturn in the uranium sector over the past 20 years and is now in the process of realizing the potential of these selected projects. Not only does it have two strong partners at its side in Cameco and Orano, who are also assuming part of the management costs, but it has also launched several fully funded drilling campaigns for 2024 to pursue potentially high-caliber exploration results and make significant discoveries. This is expected to result in increased news flow in the form of drill results in the coming months, which will draw further attention to Purepoint Uranium. With an oversubscribed financing of CA\$4 million closed in December 2023, the upcoming exploration activities are fully funded.

## What have you and your company achieved in the past 12 months?

Our longevity has been made possible only by ensuring that our exploration investment is in synch with market sentiment and the availability of funds. 2023 started out with significant excitement as we advanced our drilling at Hook Lake with our partners Cameco and Orano. New early discoveries at along the project's Carter Corridor set the stage for this year's follow up program.

We also completed drilling at a number of our 100% owned Red Willow targets. This large project sits at the north end of the Athabsasca Basin's prolific mine trend, currently producing all of Canada's uranium. Drilling there was designed to narrow down and provide focus towards the region's remaining high potential target zones.

As the market softened through the back half of the year, we turned our attention to the completion of geophysical surveys on our additional 100% owned projects in order to make sure they were prepared to take a drill.

## What are the most important catalysts for the next 6 to 12 months?

2024 looks to be a very different year. As the price of uranium surged into the New Year, we assembled the financing necessary to ensure uninterupted work (primarily drilling) through out the year.

The company is currently completing its first drill program of the year at our Hook Lake joint venture. In late March and early April, we will undertake geophysical programs at both our 100% owned Russell South project and our Smart Lake joint venture with partner Cameco. These programs will complete the necesary preparation for follow up drill programs.

In the early spring we intend to commence drilling at both our 100% owned Red Willow and Carson Lake projects on the eastern edge of the Athabasca Basin. Heading into the summer we will carry out a new form of geophysical survey at our Turnor Lake project recently used over the neighbouring high-grade Hurricane deposit. This will guide us into a fall drill program on the property.

All in all a very busy year ahead.



Chris Frostad, CEO

How do you see the current situation on the market for uranium?

The bull case for uranium is building momentum, underpinned by the global push for carbon-free baseload power. As countries strive to meet ambitious emissions reduction targets, nuclear energy is experiencing a renaissance as a reliable, scalable, and clean alternative to fossil fuels. This demand driver, coupled with years of underinvestment in mine supply, has set the stage for an explosive 2024 in uranium prices and the companies that explore for it.



**ISIN:** CA7462341032 **WKN:** A0H0GT **FRA:** P5X

TSX-V:PTU

Fully diluted: 690.8 million

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### **Skyharbour Resources**

## Many partners ensure a continuous flow of good exploration results

Skyharbour Resources is a uranium development company that has acquired 29 world-class exploration projects at attractive valuations totaling over 587,000 hectares across the Athabasca Basin. The company owns 100% of the Moore uranium project, where the high-grade Mayerick zone is located, as well as the Russell Lake project, which recently delivered a real direct hit. The company is also focusing on its prospect generator model to advance and fund exploration at its other projects in the Basin and has brought on board several partners (Orano Canada, Azincourt Energy, Valor Resources, Basin Uranium, Tisdale Clean Energy, Medaro Mining, North Shore Energy Metals) who are constantly reporting new exploration results. In total, Skyharbour has signed earn-in option agreements with partners for potentially up to CA\$33 million in partner-funded exploration expenditures, up to CA\$26 million in share issuances and up to CA\$19 million in cash payments to Skyharbour.

## Moore Lake – Top drilling results and current drilling program

The Moore Lake project is located approximately 15 kilometers east of Denison Mines' Wheeler River development project and midway between the Key Lake Mill and the McArthur River Mine. The high-grade Moore Lake project consists of 12 contiguous claims totaling 35,705 hectares. Skyharbour Resources has already demonstrated high-grade uranium mineralization, with notable new discoveries in the Main and Maverick East zones. Drilling program highlights included 20.8% U<sub>2</sub>O<sub>2</sub> over 1.5 metres within a 5.9 metre interval of 6.0% U<sub>2</sub>O<sub>6</sub>, 5.6% U<sub>2</sub>O<sub>2</sub> over 1.8 metres within a 10.7 metre interval of 1.4% U<sub>2</sub>O<sub>2</sub>, 2.25% U<sub>2</sub>O<sub>2</sub> over 3.0 metres and 4.17% U<sub>2</sub>O<sub>2</sub> over 4.5 metres including 9.12% U<sub>2</sub>O<sub>2</sub> over 1.4 metres at the Maverick East Zone. In February 2024, Skyharbour commenced a 3.000-metre drill program which includes infill and extensional drilling in the high-grade Maverick Corridor and drilling to test multiple regional targets including the Grid Nineteen target area.

### Preston – Joint venture with Orano Canada

In March 2021, Orano obtained a 51% interest in Preston (western part) and formed a joint venture together with Skyharbour Resources and Dixie Gold. Preston has a total area of 50,000 hectares and is currently being explored for high-grade targets.

## East Preston – Option agreement with Azincourt Energy

The East Preston project comprises the eastern part of the Preston project and covers an area of approximately 20,000 hectares. Azincourt Uranium has earned a 70% interest in the East Preston uranium project until February 2021. Extensive alteration and evidence of east-west crossing structures have been intersected on the project area. A drill hole sample returned 14.6 ppm uranium and a uranium/thorium ratio of 1.5, five times the expected values. Azincourt conducted an extensive drilling program in 2023, which included approximately 3,000 metres of drilling in 13 diamond drill holes. This drilling has confirmed that the identified geophysical conductors comprise structurally disturbed zones that host accumulations of graphite, sulphides and carbonates. Azincourt is currently conducting a further drilling program consisting of up to 1,500 meters of drilling in a maximum of five diamond drill holes. The priority is to follow up on the clay alteration zone with elevated uranium content identified in the winter of 2023, focusing on the transition area between the K and H zones.

## Hook Lake – Joint Venture with Valor Resources

The Hook Lake project is located 60 kilometers east of the Key Lake uranium mine and covers approximately 26,000 hectares. The joint venture partner Valor Resources encountered 9.2%  $\rm U_3O_8$ , 499g/t Ag, 5.05% TREO (rare earth oxides), 14.4% Pb, 57.4% U308, 507 g/t Ag, 3.68% TREO, 14.5% Pb and 46.1%  $\rm U_3O_8$ , 435 g/t Ag, 2.88% TREO, 8.8% Pb in float and rock chip samples.



Three of the drill holes in the S zone showed elevated radioactivity and associated alteration of varying widths. One drill hole intersected a zone of elevated radioactivity and alteration at a depth of 104.3 to 108.0 meters. After analyzing further data, a total of 11 new targets were identified. For the highest priority targets, more detailed work was proposed in the form of radon surveys and lake sediment sampling. These programs are scheduled to commence in the summer of 2024 and planning for future drilling is underway.

## Yurchison – Option agreement with Medaro Mining

The 55,934-hectare Yurchison Project was optioned to Medaro Mining Corp. in November 2021. Historical trenching near old trenches returned significant uranium (between 0.09% and 0.30%  $\rm U_3O_8$ ) and molybdenum mineralization (between 2,500 ppm and 6,400 ppm Mo). Two historical drill holes below the trenches returned strongly anomalous molybdenum grades of up to 3,750 ppm and anomalous uranium grades of up to 240 ppm. The property has high discovery potential for uranium mineralization in bedrock as well as copper, zinc and molybdenum mineralization.

#### **Russell Lake**

Russell Lake comprises a total of 26 claims covering 73,294 hectares and is an exploration property where numerous prospective targets and several high-grade uranium occurrences and drill hole intercepts have been identified. The property is centrally located between Cameco's Key Lake mill to the south and the McArthur River Mine to the north. Russell Lake is also only about 5 kilometers from Denison Mines Phoenix Project. Three phases of drilling were completed on the property in 2023, with uranium mineralization intersected in most holes in the Grayling Zone over a strike length of over one kilometer. Hole RSL23-01 returned one of the best drill results from the project; a 5.9-meter-wide intercept of 0.151% U<sub>2</sub>O<sub>2</sub>, including 1.0 meter of 0.366% U<sub>2</sub>O<sub>2</sub>. In February 2024, Skyharbour commenced a 5,000-metre drill program focused on the Fork and Grayling East targets within the broader Grayling target area, as well as the M-Zone Extension target. Drilling will also test multiple conductors extending from Denison's adjacent Wheeler River project to Russell.

### Mann Lake – Option agreement with Basin Uranium

The Mann Lake project is adjacent to the joint venture project of the same name between Cameco, Denison and Orano. It is strategically located approximately 25 kilometers southwest of Cameco's McArthur River Mine and 15 kilometers northeast of Cameco's Millennium uranium deposit. In April 2022, partner Basin Uranium launched an initial exploration campaign at Mann Lake, which included 3,000 meters of drilling. Among other things, the company encountered 323 ppm U<sub>2</sub>O<sub>6</sub> over 0.5 meters. Significant traces of rare earth elements were also encountered, including a peak value of 5,028 ppm over 0.5 metres within a broader 50 metre interval of anomalous mineralization.

## South Falcon – Option agreement with North Shore Energy Metals

The South Falcon project consists of eleven mineral claims covering approximately 42,908 hectares located approximately 50 kilometers east of the Key Lake mine. The historic uranium mineralization discovered at South Falcon is shallow and hosted in a variety of geological settings, including classic Athabasca-style basement mineralization associated with well-developed EM conductors. Up to 0.492% U<sub>2</sub>O<sub>2</sub> and 1,300 ppm lead have been found in outcrop samples at the EWA target. In May 2023, Skyharbour Resources optioned the project to North Shore Energy Metals, which can acquire up to 100% of South Falcon. As part of an initial drill program, three targets were drilled along a strong, predominantly northeast trending electromagnetic conductor system, intersecting the targeted sub-vertical EM conductors. Elevated total counts were measured with the gamma probe on two targets, reaching a maximum of 2695 counts per second (cps).





## South Falcon East – Option agreement with Tisdale Clean Energy

The South Falcon East project covers approximately 12,464 hectares and is located 18 kilometers outside the Athabasca Basin, approximately 55 kilometers east of the Key Lake mine. The Fraser Lakes B zone alone at the southern end of the property hosts at least 6,960,681 pounds U<sub>2</sub>O<sub>6</sub> and 5,339,219 pounds of ThO<sub>2</sub>. In October 2022, Skyharbour Resources optioned the project to Tisdale Clean Energy, which can acquire up to 75% of South Falcon East. In March 2024, Tisdale commenced a drilling campaign that will initially include up to 1,500 meters of drilling. The priority is to confirm and extend the existing mineralization associated with the Fraser Lakes Zone B uranium deposit. The infill drilling will confirm the presence and continuity of the existing mineralization in order to prepare an updated resource estimate and 3D model in the future. The step-out drilling will aim to expand the footprint of the deposit as the current mineralization is open in all directions. The first focus will be to extend the mineralization along strike and down dip into the bedrock. A second priority is to begin regional exploration by following up on promising anomalies in the T-Bone Lake area. Regional drilling will focus on efforts to add additional mineralized zones and deposits along the folded structural package that hosts the Fraser Lakes Zone B deposit.

## Summary: Lots of news to be expected

Skyharbour Resources, with its world-class portfolio of high-grade uranium projects in the Athabasca Basin, is very well positioned to benefit from a rising uranium price. The company continues to advance its highgrade Moore Lake uranium project, while an increasing number of partner companies are taking over the exploration and development of the other projects, financing them, making cash and share payments and creating news flow and added value. The company received CA\$6.37 million in fresh funds through a financing in December 2023 and is therefore excellently financed. Furthermore, the company naturally participates in the success of the partners through corresponding share packages that were received for the transfer of the projects.



Jordan Trimble, CEO

## **Exclusive interview with Jordan Trimble,** CEO of Skyharbour Resources

### What have you and your company achieved in the past 12 months?

Skyharbour had a notable year in 2023 which included the completion of its inaugural 9,600m drill program at its recently optioned 73,000 ha Russell Lake uranium project in which it intersected significant uranium mineralization in numerous holes. Russell is a road-accessible, premier, discovery-ready exploration property adjacent to Denison's Wheeler River Project and Skyharbour's other flagship 100% owned Moore Uranium Project with the McArthur River Mine to the north and the Key Lake Mill to the south. Skyharbour has

acquired several other properties over the past year, including 100% of the drill-ready South Dufferin Project, bolstering the Company's project portfolio in the Athabasca Basin to over 587,000 hectares covering 29 projects.

Skyharbour and its partner companies advanced several other projects through drilling and exploration programs in 2023. As a part of its prospect generator business, Skyharbour's partners Azincourt Energy, Tisdale Clean Energy, Medaro, and Basin Uranium conducted programs at the East Preston, South Falcon East, Yurchison and Mann Lake Projects, respectively. Skyharbour also an-

nounced a new earn-in option agreement with North Shore Uranium to option the Falcon Project, bringing the total to seven partner companies of which three have completed their earn-ins and are now JV's.

### What are the most important catalysts for the next 6 to 12 months?

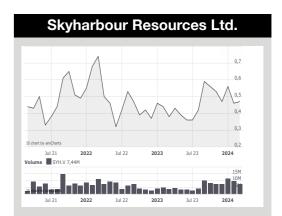
The main catalysts for Skyharbour will be the single largest, annual drill campaign consisting of an initial 8,000 metres in the winter with 5,000 metres planned at Russell Lake and 3,000 metres planned at Moore. Additional drilling is planned at the Russell and Moore Lake projects in the Summer and Fall as the Company is fully funded and permitted for a combined total of 15-20,000 metres at these projects in 2024.

Skyharbour's partner company Tisdale has commenced an initial 1,500m of drilling at the South Falcon East project, with plans to infill drill at the Fraser Lake Zone B deposit, followed by regional drilling. North Shore Uranium has commenced an inaugural 1,500m drill program at the Falcon project, along with JV partner Azincourt planning to drill 1,500m at East Preston to follow up on drilling success in 2023. Newly formed JV partner Valor Resources is also planning additional exploration at Hook Lake, and JV partner Orano has commenced its 2024 field program at Preston.

Skyharbour has now signed seven option agreements that total to over \$80 million in potential project consideration consisting of cash and share payments, as well as exploration funding by the partner companies. Skyharbour plans to continue to grow its prospect generator business by acquiring projects at attractive valuations and bringing in partner companies to advance these secondary projects.

## How do you see the current situation on the market for uranium?

It has been a significant year for the uranium market as uranium was one of the top performing commodities in 2023, reaching a high of approx. \$110/per pound in the spot market in early 2024. Geopolitical conflict, nuclear utilities facing expiring contracts, and large producers like Cameco and Kazatomprom having production issues, are adding to an already strained supply side. On the demand side, more and more countries are recognizing the importance of nuclear energy with 22 nations pledging to triple their nuclear energy output by 2050 at the recent COP28 conference. Many countries trying to achieve decarbonization objectives will have to rely on nuclear energy as the only source of clean, reliable, affordable, scalable baseload electricity. Furthermore, the life extensions of existing reactors, the build out of new ones, and the advent of SMR's are expected to provide for ongoing robust demand for uranium. These strong underlying fundamentals should underpin a continued move higher in the sector in 2024.



ISIN: CA8308166096 WKN: A2AJ7J

WKN: A2AJ7J FRA: SC1P TSX-V: SYH OTCQB:SYHBF

Fully diluted: 207.9 million

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### **Uranium Energy**

### Resumption of uranium production in August 2024



Uranium Energy Corp is a uranium mining and exploration company based in the USA. Uranium Energy owns two hub-and-spoke operations in South Texas and Wyoming, of which the Wyoming operation will resume uranium production in August 2024.

In addition, the company controls a pipeline of high-grade uranium projects in Canada, the USA and Paraguay and one of the highest grade and largest undeveloped ferrotitanium deposits in the world, located in Paraguay.

The company generated revenues of US\$163.95 million in fiscal year 2023 from the sale of 3,150,000 pounds of uranium inventories on the spot market and achieved a gross profit of US\$49.60 million.

#### **Hub-and-spoke operation in Texas**

Uranium Energy owns several uranium projects and a processing plant in South Texas. The Palangana In-situ Recovery (ISR) project is fully licensed and has a measured and indicated resource of 1.1 million pounds and an inferred resource of 1.2 million pounds of U<sub>3</sub>O<sub>8</sub>. Historically, the cash cost of production has been less than US\$22 per pound of uranium.

The Goliad ISR project is also fully licensed for production and, like Palangana, is located near the Hobson processing plant in South Texas. It has a NI 43-101 compliant resource of 5.5 million pounds of measured and indicated  $U_3O_8$  and 1.5 million pounds in the inferred category.

UEC's largest ISR project in South Texas is Burke Hollow and covers approximately 20,000 acres. Burke Hollow has an inferred resource of 7.09 million pounds of  $\rm U_3O_8$  and is located approximately 50 miles from Hobson. Since 2019, Uranium Energy has conducted several drilling campaigns at Burke Hollow, which included delineation drilling and the installation of monitoring wells to further advance the project towards uranium recovery.

The Hobson production facility in South Texas is a fully licensed processing plant with a capacity of 4 million pounds of U<sub>3</sub>O<sub>8</sub> per year. The facility has been completely renovated and is state of the art. Hobson serves as the hub in the company's huband-spoke strategy, processing uranium from the various low-cost ISR mines in South Texas.

Most recently, Uranium Energy Corp has been aggressively advancing exploration and delineation work at its Burke Hollow and Palangana ISR projects, which are slated for further near-term development in preparation for uranium extraction.

In total, Uranium Energy has around 19 million pounds of U<sub>2</sub>O<sub>0</sub> in Texas.

#### Hub-and-spoke operation in Wyoming – recommissioning in August 2024

Uranium Energy created another hub-and-spoke operation through the acquisition of Uranium One Americas. The Irigaray processing facility is located approximately 45 miles from the main Reno Creek project and has a licensed capacity of 2.5 million pounds of  $\rm U_3O_8$  per year. Reno Creek has a large NI 43-101 resource of 26 million pounds of  $\rm U_3O_8$  in the M&I category. A 2014 pre-feasibility study confirmed that Reno Creek is a highly economic project with low capital and operating costs. In addition, the project has much higher exploration potential.

In addition, the Christensen Ranch ISR project can be integrated and combined with the Reno Creek project. Christensen Ranch and the other newly acquired projects host approximately 37.6 million pounds of U<sub>3</sub>O<sub>8</sub> in historically estimated measured and indicated resources and 4.3 million pounds of U<sub>3</sub>O<sub>8</sub> in historically estimated inferred resources with significant growth potential.

In January 2024, Uranium Energy announced that the Company's Board of Directors approved the resumption of uranium produc-

tion at its Christensen Ranch in-situ recovery operation in Wyoming. The recovered uranium will be processed at the fully operational Irigaray Central Processing Plant. Initial production is expected in August of this year and will be funded with existing cash on the company's balance sheet.

#### **Canadian projects**

Uranium Energy's Canadian portfolio consists of over 30 uranium projects covering key areas in the producing east and developing west of the prolific Athabasca Basin.

#### Roughrider

The largest Canadian project by far is called Roughrider and was acquired by Rio Tinto in October 2022 for US\$150 million in cash and shares. It has 27.8 million pounds of U<sub>3</sub>O<sub>8</sub> in 389,000 tons with a grade of 3.25% U<sub>o</sub>O<sub>o</sub> in the indicated category and 36.0 million pounds of U<sub>2</sub>O<sub>2</sub> in 359,000 tons with a grade of 4.55% U<sub>2</sub>O<sub>2</sub> in the inferred category. There are more than 20 uranium deposits within 100 kilometers of Roughrider, five current and past producing mines and two uranium mills, providing excellent infrastructure for future development. Rio Tinto has already completed extensive pre-production and environmental baseline work, which has provided a solid foundation and significant value for the completion of upcoming technical reports, moving the project efficiently towards a production decision. In January 2024, Uranium Energy announced the discovery of new high-grade vein-hosted mineralization grading 6.29% eU<sub>2</sub>O<sub>6</sub> over 2.9 metres west of the East Zone deposit. The company plans to drill a further 20 holes totalling approximately 9,000 metres in the near future to identify new areas of uranium mineraliza-

6 of the other 30 Canadian projects are at an advanced resource stage and are already involved in strong joint venture partnerships with established uranium mining companies.



These project interests include a 49.1% interest in Shea Creek, currently one of the largest undeveloped deposits in the Athabasca Basin, which hosts 67.57 million pounds of U<sub>o</sub>O<sub>o</sub> in indicated resources and 28.06 million pounds of U<sub>2</sub>O<sub>6</sub> in inferred resources. Furthermore, a 100% interest in Horseshoe-Raven, an open pit project located only 4 kilometers from Cameco's Rabbit Lake Mill with 37.43 million pounds of U<sub>2</sub>O<sub>2</sub> in Indicated Resources. As well as an 82.8% interest in Christie Lake, a resource-stage asset in the Athabasca Basin that hosts 20.4 million pounds of U<sub>2</sub>O<sub>2</sub> inferred resources and recently reported 68.7% eU<sub>2</sub>O<sub>2</sub> over 2.1 meters, 23.2% eU<sub>2</sub>O<sub>0</sub> over 3.4 meters and 15.94 eU<sub>2</sub>O<sub>0</sub> over 7.0 meters.

In January 2024 Uranium
Energy announced the
discovery of new
high-grade vein-hosted
mineralization west of the
East Zone deposit.
(Uranium Energy).

#### **Titanium project Alto Paraná**

In Paraguay, Uranium Energy holds more than 70,000 hectares of land on which the Alto Parana titanium project and its pilot plant





are located. The Alto Paraná project is one of the highest grade and largest ilmenite deposits in the world with a combined regional resource of 3.6 billion tons grading 7.3% TiO<sub>2</sub>. Mineralization occurs at surface with an average thickness of 6.3 meters. Future development and mining operations can benefit from the highly reliable and easily accessible infrastructure in the area, which is close to a major hydroelectric power source and various bulk transportation routes. In November 2023, Uranium Energy published its own economic feasibility study (PEA), which confirmed the project's potential for economic exploitation. The base case design (~150,000 tons per annum (tpa) of high titanium slag and ~100,000 tpa of high purity pig iron) resulted in US\$419 million of after-tax NPV at an 8% discount rate and a 21% IRR. The initial investment of US\$ 338 million enables an after-tax amortization of 4.7 years. The average operating costs over the entire 23-year life of the mine are US\$ 712 per ton of slag. The stretch production case design (~500,000 tpa high titanium slag and ~320,000 tpa high purity pig iron), resulted in an NPV of US\$1.55 billion and an IRR of 25%. The initial investment would be US\$ 918 million and the amortization after tax would be 4.2 years. The average operating costs would be US\$ 681 per ton of slag. The project is to be monetized in the near future.

#### Further potential top projects in the pipeline

In addition to the projects listed above, Uranium Energy has a number of other outstanding projects. For example, the Anderson Project in Arizona, which hosts at least 32 million pounds of U<sub>2</sub>O<sub>2</sub> and could have an average production of more than one million pounds per year, with a total production of 16 million pounds of uranium over a 14-year mine life and a direct operating cost of \$30.68 per contained pound of U<sub>2</sub>O<sub>2</sub>.

Uranium Energy also has two prospective ISR uranium projects in Paraguay with geology very similar to South Texas. The Yuty project has resources of 11.1 million lbs.

U<sub>3</sub>O<sub>8</sub>. The Oviedo project has an exploration target of 23 to 56 million pounds of U<sub>3</sub>O<sub>8</sub> under NI 43-101 criteria.

#### Memorandum of understanding on cooperation with SMR developer **TerraPower**

In November 2023, TerraPower and Uranium Energy announced a Memorandum of Understanding aimed at re-establishing domestic uranium fuel supply chains. This MOU will enable TerraPower and Uranium Energy to secure the potential supply of uranium for TerraPower's unique sodium reactor. This includes helping to build a robust U.S. nuclear fuel supply chain for small modular reactors (SMR) and advanced reactors (AR) and their high level low enriched uranium (HALEU) requirements. These new reactors, like the ones TerraPower is advancing in Wyoming, represent innovative leaps in technology that can help meet the world's growing need for clean energy with abundant carbon-free power around the clock.

### **Summary: Production start raises** Uranium Energy to a new valuation

Uranium Energy has two fully licensed, lowcost ISR hub-and-spoke operations in South Texas and Wyoming with a current capacity of 6.5 million pounds of U.O. per year. With its low-cost ISR projects in Texas and Wyoming, Uranium Energy is ideally positioned to satisfy the U.S. hunger for uranium. Uranium Energy has been debt-free since January 2022 and is ideally positioned to ramp up uranium production in the USA again soon and benefit from rising uranium prices. In addition, it owns the third largest uranium resource base in the Athabasca Basin after Cameco and Orano, which means an excellent project pipeline.

### **Exclusive interview with Amir Adnani,** President, CEO and founder of **Uranium Energy**



#### What have you and your company achieved in the past 12 months?

2023 proved to be another year of significant achievements as we continued to build the premier North American focused uranium company. We made more accretive acquisitions and advanced our projects with resource expansions and production restart programs. We continue to focus on a strategy aimed at developing a robust uranium supply from the stable and secure jurisdictions of the U.S. and Canada, with near term U.S. ISR production and a pipeline of high-grade Canadian projects with exceptional growth potential. We are debt free and 100% unhedged to take advantage of further price appreciation. We booked record revenue of \$163.95 million from spot market sales of 3,150,000 pounds of uranium inventory, realizing a gross profit of \$49.60 million for the fiscal year ended July 31, 2023. Proceeds from realized gains materially reduced capital requirements for accretive acquisitions. We completed \$340 million in acquisitions to create the largest diversified North American focused portfolio. These acquisitions have grown our resources that now total 226.2 million pounds U<sub>2</sub>O<sub>2</sub> in the Measured and Indicated Categories and 102.7 million pounds U<sub>2</sub>O<sub>0</sub> in the Inferred category, securing our status as one of the largest and most diversified North American focused uranium companies.

We also established UEC as one of the largest resource and land holders in Canada's Athabasca Basin with the successful acquisitions of UEX Corp., the world-class Roughrider Uranium Project and a portfolio of exploration projects from Rio Tinto.

In South Texas and Wyoming, we completed programs to accelerate the production-readied timeline that will enable shorter leadtimes to restart ISR production from our hub and spoke platforms. UEC is very pleased that these preparations facilitated an announced restart of the Irigaray/Christensen Ranch operations for August of this year. In South Texas, we established the second production area at Burke Hollow and carried out delineation drilling at the past producing Palangana ISR Project in preparation for its restart.

#### How do you see the current situation on the market for uranium?

Across the globe, an increasing number of countries are adopting plans and programs to restart, extend the life of and or build new nuclear plants in the guest for clean, safe, highly reliable and cost-effective electricity that nuclear power provides. The current structural deficit between production and consumption will likely continue pushing prices higher with the markets' transition from being inventory driven to production driven. The lead times for new production can run 10 years or longer, and the gap between production and requirements is projected to average over 40 million pounds a vear over the next 10 years. Restarts and significant new mining operations will be needed to meet future requirements. These factors underpin our belief that we are in the early innings of a protracted growth stage for nuclear energy, uranium production and UEC!



Amir Adnani, CEO

# **Uranium Energy Corp.** 200M

ISIN: US9168961038 WKN: A0JDRR

FRA: U6Z NYSE: UEC

Fully diluted: 413.5 million

#### **Uranium Energy Corp.**

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### **Uranium Royalty**

## Uranium royalty company with top prospects and a full wallet

Uranium Royalty Corp. is a Canadian company focused on strategic investments in uranium interests, including royalties, streams, debt and equity in uranium companies, as well as physical uranium businesses. This makes Uranium Royalty the first company to apply the successful royalty and streaming business model exclusively to the uranium sector. The portfolio includes interests in more than 20 development, advanced-stage, permitted and producing uranium projects in multiple jurisdictions. The portfolio also includes a large inventory of physical uranium as well as cash and tradable securities that could be monetized immediately if additional high-calibre royalty opportunities arise.

### Athabasca Basin royalties

Uranium Royalty holds 5 prospective royalties in the Athabasca Basin.

#### **McArthur River**

The McArthur River Mine is considered the highest-grade uranium mine in the world and is currently owned by Cameco. McArthur River has nearly 400 million pounds of U<sub>3</sub>O<sub>8</sub> in reserves and is expected to produce 12.6 million pounds of U<sub>3</sub>O<sub>8</sub> in 2024. Uranium Royalty holds a 1% Gross Overriding Royalty on a 9% interest. These payments are to be made in the form of physical uranium.

#### Cigar Lake/Waterbury/Dawn Lake

Cigar Lake has a license to produce 18 million pounds of  $\rm U_3O_8$  per year and reserves of approximately 160 million pounds of  $\rm U_3O_8$ . Cigar Lake's total production in 2023 was 15.1 million pounds of  $\rm U_3O_8$ . Uranium Royalty holds a 20% Net Present Interest on a 3.75% interest.

In addition, an option was secured to earn a 20% net profit interest on a 7.5% share of the total uranium production from the Dawn Lake project area. The royalty rate will be ad-

justed to 10% in the future once the production of 200 million pounds from the combined license areas of the Dawn Lake and Waterbury/Cigar projects is reached.

#### Roughrider

Roughrider is an advanced underground deposit owned by Uranium Energy. It has approximately 58 million pounds of U<sub>3</sub>O<sub>8</sub> in reserves. Uranium Royalty holds a 1.97% net smelter royalty in Roughrider.

#### **Russell Lake**

Russell Lake is an exploration project being developed by Skyharbour Resources and Rio Tinto. Russell Lake covers approximately 72,000 hectares of license area on highly prospective ground. Uranium Royalty holds a 1.97% net smelter royalty on Russell Lake.

#### **Dawn Lake**

Dawn Lake is operated by Cameco. The project area is located approximately between the McClean Lake mill and the Cigar Lake mine. Cameco reported estimated indicated resources (excluding reserves) of 17.9 million pounds at an average grade of 4.42% U<sub>3</sub>O<sub>8</sub> and inferred resources of 1.0 million pounds at an average grade of 1.02% U<sub>3</sub>O<sub>8</sub> for the Tamarack deposit located in the Dawn Lake project area. Uranium Royalty has a 10% to 20% sliding royalty on a 7.5% share of total uranium production from the Dawn Lake project area.

### **US-ISR** royalties

In the USA, Uranium Royalty holds several royalties on ISR projects

#### Reno Creek

Reno Creek is owned by Uranium Energy and is located in Wyoming. The project is fully permitted, has resources of 26 million pounds of U<sub>3</sub>O<sub>8</sub> and is ready for construction. Uranium Royalty holds a 0.5% net present interest in Reno Creek.

### Church Rock

Church Rock is located in New Mexico and is owned by Laramide Resources. It has inferred resources of approximately 50 million pounds of U<sub>3</sub>O<sub>8</sub>. Uranium Royalty holds a 4% net smelter royalty in Church Rock.

#### **Dewey-Burdock**

Dewey-Burdock is located in South Dakota and is being developed by enCore Energy. The most recent PEA estimates an after-tax NPV at an 8% discount of US\$147.5 million at a constant price of US\$55 per pound. Dewey-Burdock has approximately 17 million pounds of U<sub>3</sub>O<sub>8</sub>. Uranium Royalty holds a 30% net present interest in Dewey-Burdock and a staged royalty of 2-4% on portions of the Dewey-Burdock project.

#### Lance

Lance is located in Wyoming and is operated by Peninsula Energy. The project hosts over 53 million pounds of U<sub>3</sub>O<sub>8</sub>. Uranium Royalty's 5% gross revenue royalty covers a portion of the Kendrick and Barber properties. A positive feasibility study for Lance was presented in August 2022.

## US royalties – conventional projects

In addition to the royalties on ISR projects, Uranium Royalty holds further royalties on conventional projects in the USA.

#### **Anderson**

Anderson is located in Arizona and is owned by Uranium Energy. The project, in which Uranium Royalty holds a 1% net smelter royalty, hosts 29 million pounds of U<sub>3</sub>O<sub>8</sub> resources. A preliminary economic assessment indicated an after-tax NPV (discounted at 10%) of US\$101.1 million at a fixed uranium price of US\$65 per pound. Average operating costs over the life of the mine were estimated at US\$30.68 per contained pound.

#### Slick-Rock

Slick-Rock is located in Colorado and will be developed by Anfield Energy in the future. The project, in which Uranium Royalty holds a 1% net smelter royalty, hosts approximately 11 million pounds of U<sub>3</sub>O<sub>8</sub> resources. A preliminary economic assessment resulted in an after-tax NPV (discounted at 10%) of US\$31.9 million using a model with a fixed uranium price of US\$60 per pound.

#### **Workman Creek**

Workman Creek is located in Arizona and is owned by Uranium Energy. The property has extensive historical data consisting of 400 exploration and development drill holes, geologic mapping, regional and detailed geochemical, petrographic, mineralogical-paragenetic and metallurgical studies. To date, 5.5 million pounds of resources have been proven. Uranium Royalty holds a 1% net smelter royalty.

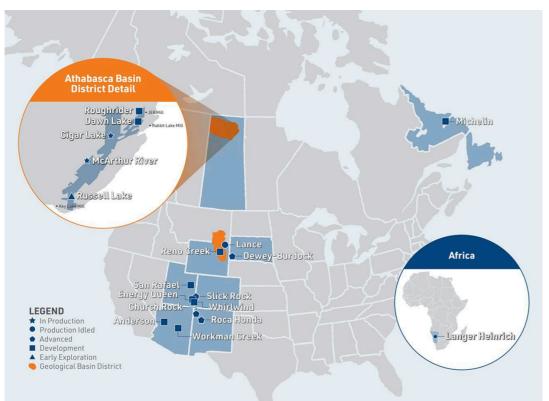
#### Roca Honda

Roca Honda is owned by Energy Fuels and is located in New Mexico. Uranium Royalty holds a 4% gross revenue royalty. The Section 17 area has a partially developed vertical mine shaft and haul road. Energy Fuels plans to incorporate the Section 17 area covered by the royalty into the Company's permitting efforts. An economic feasibility study determined a potential production of 2.7 million pounds of U<sub>2</sub>O<sub>2</sub> over a mine life of 9 years.

### **Further US royalties**

In addition, Uranium Royalty has a 2% gross royalty on portions of the San Rafael project located in Utah and operated by Western Uranium & Vanadium. In addition, a 2-4% sliding scale gross royalty on portions of the Whirlwind Project, located in Colorado and Utah and operated by Energy Fuels, and a 1% gross royalty (applicable to uranium and vanadium sales) on portions of the Energy Queen Project, located in Utah and also operated by Energy Fuels.





Uranium Royalty's portfolio includes interests in more than 20 development, advanced, permitted and producing uranium projects and is globally diversified (Uranium Royalty).

#### Langer Heinrich

Langer Heinrich is a producing uranium mine in Namibia and hosts around 120 million pounds of  $\rm U_3O_8$  resources. Uranium Royalty receives AU\$0.12 in production royalties for every kilogram of  $\rm U_3O_8$  produced.

#### Michelin

Michelin is an advanced uranium project in the Canadian province of Labrador. The operator Paladin Energy acquired Michelin in 2011 for CA\$ 260.9 million. Michelin is a low technical risk project in a prime uranium district. The project hosts approximately 127 million pounds of U<sub>3</sub>O<sub>8</sub> resources. Uranium Royalty holds a 2% gross revenue royalty on Michelin.

## Investment in Yellow Cake plc and physical uranium purchases

In addition to the aforementioned interests in uranium projects, Uranium Royalty also owns 7.5 million shares in Yellow Cake plc. Currently, Uranium Royalty has approximately 2.60 million pounds of physical uranium in stock or under contract for delivery at an average purchase price of US\$56.28 per pound. Uranium Royalty will continue to receive future royalty payments from McArthur River in the form of physical uranium.

## Summary: Royalty payments increasing + Large assets for further royalty opportunities

Uranium Royalty is a company that has positioned itself early for the coming uranium boom and has secured several high-profile royalties, with the first payments expected shortly. In particular, corresponding payments from McArthur River in the form of physical uranium would have additional leverage if the uranium price rises. With this second pillar "physical uranium", the company will be able to benefit immediately from rising uranium prices, which has already happened in recent months. All in all, more and more royalty projects are likely to come online in the coming years and thus ensure a positive cash flow at Uranium Royalty. In October 2023, the company was able to generate US\$ 30 million in fresh funds through financing and a further US\$ 22.9 million in February 2024. Furthermore, the company has the opportunity to generate up to US\$40 million through the successive issuance of shares, which will enable the possibility of further royalty acquisitions. As of March 15, 2024. Uranium Royalty Corp. held approximately US\$330 million in cash, marketable securities and physical uranium inventories. This will enable the realization of further high-profile royalty opportunities in the future.

## **Exklusives Interview mit Scott Melbye, President, CEO von Uranium Royalty**



## What have you and your company achieved in the past 12 months?

The dramatic doubling of uranium prices over the past year has been a very positive development for a royalty and streaming model like ours. First of all, amongst our existing 20 royalty interests on 18 projects, we are seeing a number of these URC assets returning to production or are seeing their development timelines improve in light of tightening supplies and higher prices. Most notably, we are pleased that McArthur River and Cigar Lake have returned from Covid and market disciplined shutdowns and ramping to 18 million pounds per year production according to Cameco/Orano. Even at last year's reduced production, we saw about US\$1.2 million value paid out to URC from the McArthur royalty in the form of physical uranium book transferred to our account at Cameco's Blind River facility. This will increase as production rises, and the value will also go up with higher prices. The Cigar Lake net profit interest has yet to cash flow under the terms of our royalty formula but will be advanced sooner as the mine produces more and sells that product at higher prices. We were especially pleased to hear Cameco's quarterly results announcement of the consideration of extended operations into the 2030's, otherwise referred to as Cigar Lake Phase Two.

We are also pleased to see Paladin's Langer Heinrich mine return to production this year in Namibia and look forward to the restart plans being realized at Peninsula's Lance Project in Wyoming over the course of 2024. The former paying a small, fixed royalty per pound and the latter seeing a 1% gross revenue covering the entirety of the project, with portions being subject to a 5% royalty interest

Additionally, a number of our U.S. royalty interests are being buoyed by both strong prices, and policy support coming out of the Administration and Capitol Hill.

### What are the most important catalysts for the next 6 to 12 months?

Clearly the continued strengthening of uranium prices will benefit URC, not only in increasing cash flows from existing royalties, but will also continue to create the conditions for growth in the URC portfolio. As a capital provider to the next generation of uranium miners and developers, this need, in our estimation, for as many as 8-10 new mines globally, is presenting many exciting opportunities to establish new royalties and streams with emerging producers.

Also, don't forget the impact these rising prices is having on the value of our significant physical uranium inventory which represents an increasing source of capital that can be deployed into new royalty investments. URC currently holds 2.5 million pounds of U<sub>3</sub>O<sub>8</sub> with an average cost basis of US\$54.44 (currently worth US\$212.5 million at a \$85 per pound market price).

Scott Melbve, CEO



ISIN: CA91702V1013
WKN: A2PV0Z
FRA: 59U
NASDAQ: UROY

Fully diluted: 136.7 million

TSX:

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