MACRO Voices
with hosts Erik Townsend and Patrick Ceresna

Mike Alkin: Uranium Supply Is In Structural Deficit And The Fuel Buyers Don't "Get It"!

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Erik: Joining me now is Sachem Cove co-founder and fund manager, Mike Alkin. Mike, it's great to get you back on the show. It's been, I don't know, six months or so. Last time I talked to you was just before a market bottom. Let's make that a tradition. It's great to have you back on, let's start with the big elephant in the room. We've got, what I think is arguably the best nuclear news flow year in the history of the nuclear industry, between restarts, new builds, SMRs, Chris Wright announcing that the US is mounting a gigantic nuclear renaissance, touring the national laboratories that do the best research, government signaling that they're going to be very supportive of nuclear. It's got to be the most bullish year ever. And I don't think we've ever seen worse investor sentiment. We're down 40%, market's crashing. What gives, Mike? How is this possible? And how long can it continue?

Mike: Yeah, look, we're talking about uranium prices down, I think we have to ask ourselves, which uranium price? As you know, there are two types of prices: spot and term (long-term contracts). The spot market is 26% of the market, 25% of the market. The last couple of years, utilities, the end user, they're 14% of that of the spot market. So, by definition, just simple math, you take the 2025, 26% of market, and they're 14% of it, utilities by 4% of the overall volume of pounds in that market. And utilities, really the only end user, you know, save a government here or there, but they're it. So, there's a focus on that. And the spot market is very thin. There's not a lot of demand in it. Most of the market, 70% is producers, or 70% are traders that are trading in days and weeks, not in several months and years. So, it's a flows market. Some flows come in at times, off-take, there might not be a buyer there, but it's not fundamental supply and demand. However, the long-term market is, that's where 75%+ of the pounds trade. And in that price, we've seen that price up, last year, that price was up in the high teens, percentage wise. This year, it's year to year from last year, this year, it's up 7% despite volumes being down over 20% in that contract market. That's the economic viability supply. That's the view we're taking. That's where companies make their money, right? So that's where it's been. Spot market serves as a gauge. But why is it? Why do people pay attention? Because it's reported once a day, and the term markets reports once a month. And it's as basic as that, but in no way, shape or form, is it representative of the supply and demand in the market and the amount of available uranium needed to fuel their global reactor fleet.

Erik: Let's talk more about those bullish factors, because, as you know, equity markets tend to be forward looking. But in commodity markets, we have to balance supply and demand in the

here and now. And as much as these government actions like codifying financial support for US nuclear builds, Chris Wright's tour of the national labs, all this stuff is incredibly, incredibly bullish for nuclear, but it's all about creating more demand for fuel about 10 years from now, when all of those reactors are actually built. So I guess maybe we should be ignoring that long term nuclear industry bullish news and only looking at the supply-demand imbalance that exists in the uranium market right now, independent of where nuclear is. Is that the reason that this disparity seems to exist? And if so, what still doesn't add up for me is, all the analysis I hear, whether it's from you, from Guy Keller, from our friends at Uranium Insider, everybody is saying that there's a deficit, almost everybody. A few people are saying that, that there is a whole bunch of major supply coming online, but they don't seem to be the credible analysts. What's going on? Is there somebody who's got the wrong message? Or is there another viewpoint that I don't understand here?

Mike: I think what you see is in terms of AI demand, SMR demand, future advanced technology demand, you can paint a really good picture, for us, we don't use a single pound of it in our modeling. We don't need it. It's nice to have. It's a cherry on top. And I think there will be a great story there, but for the here and now and for contracts that need to be signed, we're focused on the existing reactor fleet, the 440 reactors, plus the 65 under construction. We're focused on plant extensions and uprates. You're seeing a tremendous amount of life extensions —20 years, 40 years— coming out of reactors that might have been scheduled to close. Uprates, where they improve the reactor and they burn more fuel, which is meaningful, and you're starting to see that take place. So that's where we focus. And when we're talking about deficits, we're talking about the amount of economically viable supply that can meet the long term demands of nuclear power plants. And the reason we do that is what I said earlier, more than three quarters of the pounds that transact in a given year, under long-term contracts and multi-year, that can last upwards of 10,15 years. And so, the market's testing that now, the equity market is ignoring the reality that term pricing is at a 17-year high. 17-year high, it's at $80 a pound in the fixed price. And it's focused on the here and now, the short-term, which is just traders whipping pounds back and forth. There's been some excess supply in the market short term, only because they're in the short-term market, only because there's been just a lack of utility demand. Because utilities are focused on going the other way. They're not going to sit there. They're buying. It's a three-year cycle, so if they're buying pounds today, it's not to go in a reactor today. It's going to go in a reactor three years from now. They're not rushing in there to do it. And as I said, they're 4% of all pounds sold. So, I think sometimes, narratives have a life of their own, and when the price is reported once a day, that's what people are going to stare at. So, how do you think about it, when we say structural deficits? We're thinking about, we know that last year, the utilities, the long-term volumes were down. Why? Because they were focusing on other important things in the fuel cycle, securing enrichment and conversion. Because Russia has a dominant role. They don't have a dominant role in uranium. So, they were in there focusing on that. And volumes came down, like I said, about 25% last year in the contract market, yet the price was up 17%. You make your living in the commodity world, where do volumes go down that much and pricing goes up, it doesn't. And what that tells us is there is not enough economically viable supply. It doesn't it reinforces the work we've done.

Erik: Mike, let's come back to restarts. Help me understand how this works. Suppose you got a reactor that's been shut down. It's been shut down for a while, and they've just announced that they're going to restart it. And let's say it takes, I don't know, year and a half, two years, in order to get it restarted, and then it's going to run for the next umpteen years. What happens? Do they contract to just get the first load of fuel? Or do they say, okay, well, we're going to have to keep this thing running. So, we've got to add enough fuel to have an inventory of several refuelings worth. How does that work?

Mike: And I think the restarts are nice. They're a nice story, right? Microsoft signs a deal with Three Mile Island to bring it back. It's going to go online in a few years, and it will run for 20 years. I think it's a $1.8 billion commitment. All great. How much does it use in fuel? Somewhere between, depending on the enrichment level, we won't get it go down a rabbit hole with that, but you use, on average, 500,000 pounds a year. That could be plus or minus 20% depending on enrichment capacity. But that sounds nice, and that's good, but it's a nice story that big tech is validating nuclear. But when we look about the number of restarts, in a given year, if we're talking about ballpark now, 190 to 200 million pounds of demand, growing at a good clip, that's not that big a deal. And when you think about the number of reactors in the US, there's just a few that could come back, you're talking three. So, does that million and a half pounds matter? Yeah, it does, it's not nothing, but it's not a driver, it's a nice feel good story, and it's a nice validator. And so, what would they do? They would buy. They're going to need that fuel. They go out and contract for it three years ahead of time and get it delivered. But again, it's not a major needle mover, just like the AI demand that would materialize in the future. Is it nice to have? Sure. Do you need it? No, because there's not enough economically viable supply now to meet the future, just before we ever heard of the restarts for AI, for big tech, there's just not enough economically viable supply.

Erik: Let's come back to term pricing, because on this podcast, in previous episodes, you've explained this distinction between spot and term pricing. Justin Huhn has explained it, Guy Keller has explained it on other podcasts besides MacroVoices, I've heard Grant Isaac from Cameco make the same point, but here's what nobody's explaining, especially somebody like Grant Isaac from Cameco. Why hasn't this industry made term pricing more transparent? You guys are all complaining that the markets focused on the wrong thing. They're looking at spot. Well, if term wasn't a secret, then maybe they'd be looking at term.

Mike: It's a great question. It's part of why the industry is broken. It's a broken industry, and that's where asymmetry, you can find it, right? Because the harder it is to get information, the more dysfunctional the market is. If a market's dysfunctional and people who make a living in the markets are used to a certain playbook, you have a hard time walking into a market that's dysfunctional and broken and not applying it. But we've been around this market a long time, and I would say there's a few, a couple of price reporters that are out there. they report in the term market once a month, and they report only one portion of the term market. They report the fixed price, which is a base price, plus an escalator. It starts delivery three years out in the future, in a market where there's a reasonable amount of supply, that's where most of the contracts are signed. Utilities would like the certainty, when you flip the switch and there's a

market where pricing is up, you're at 17-year highs, the producers would like more exposure to that. You're an oil trader. You don't have a real futures market here. So, the way they come about it is by collaring things, floors and ceilings, and that's called market related price. You're there now, you're seeing a lot of market related contracts. Spot price today is 64, 65 bucks. Ceilings are 120, 125, 130, 135, whatever they could get. But in that ballpark, your floors are 65, 68, 63, in that ballpark, where would you like to be? You'd like to be the producer, right? So that's pretty great asymmetry. The problem is it never gets reported. It only gets talked about. If Cameco is mentioning it on a conference call, you don't see it. Why? Because it's not reported. Even though the bulk of the contracts might be being signed there, we've jumped up and down to price reporting and get nowhere with it. Why? Where does that stem from? I don't know, it's a very small market. It's a very small industry, and the utilities control it, not the uranium producers. There are no partnerships. Utilities control the market. They pay what they have to pay, when they'll pay it. But you'll see, when you notice contracts, unless it's a very small producer on the ASX, that because the ASX mandates, with their reporting, if you announce contract, you got to say who it's with. You got to give the term of it. But that doesn't happen in North America. It's not required, so you don't see it.

Erik: Mike, let's talk about some of the narratives that might be driving this bearish investor sentiment. One of them that I keep hearing, although this is not my view, I'm just reporting it here to play devil's advocate. What they'll say is, oh, look, this whole thing has been about the Ukraine war, the big explosion in uranium crisis, really started around early 2022, so it must be that the Ukraine war has been the primary driver. Looks like the Ukraine war is nearing a resolution. As soon as it's resolved, we're headed back to 2021 uranium prices. It's all going downhill from here. And the end of sanctions against Russia is going to just flood the market with all that Russian uranium from all those Russian uranium mines that actually don't exist but those Russian uranium mines, you know, those ones.

Mike: You know, it's their narrative that's out there. And look, it's always great to have a different view. It's great to have short interest in a name. I mean, shorts do their work. So, I welcome that. What I would say is, it's a very conflated view the role of Russia in the market, right? So, you laid out what consensus is just now. And what I would tell you is, to understand the role of Russia in the fuel cycle is there throughout the upstream to the downstream, the upstream is uranium mining. They're not a big player there. It's 14% of the market for them. The next stage, as you know, is conversion, converting uranium to a gas, UF_6, uranium hexafluoride. They control 30% of that market. And then the next, the further downstream you go, enrichment, which is where the magic happens. Without enriched uranium, nothing gets no fission reaction. They control over 40% of that market. So, what really happened after the Russians walked in and started looking, February ’22, the price of uranium went up four or five bucks from 43 to 49 and then it kind of languished there, and it went into the low to mid 50s for the next year. What really took it from 55 to 110, which you had a coup in this year, in the summer of ‘23 and people worried, some pounds weren’t coming in, and that kind of just drove the market higher. It wasn't driven by Russia, Russia doesn't play a role. So if the Russian war ends tomorrow, we hear, well, they're going to flood the market with uranium. Russia is a net importer of uranium. Let me repeat that. Russia has a domestic reactor program and an export program. They build reactors

overseas that they are responsible for delivering uranium, between the uranium mining in Russia and the joint ventures they have in Kazakhstan. Those are just enough for them to balance their own needs. They are a net importer of uranium. They sell enriched uranium to the United States under the Russian suspension agreement, which came about in the early 90s from an anti-dumping case, which every five years or so, renews. They can't sell until 2027 more than 20% of the enriched uranium in the United States. Under that Russian suspension agreement is about 1.4 million pounds of uranium that they could include in that, the United States uses 45 to 50 million pounds a year. Now, what happens when the Russians sell enriched uranium, the US, separately, those utilities send back the feed in either the form of converted uranium, UF_6, or raw uranium and U308, because Russia needs it. So, for those who sit there and say, oh, the price of uranium is going to collapse because the war ends. If you're a uranium investor, you want the war to end. Why? Because the utilities that have been focusing on enrichment and conversion, because that's where the pinch points are, won't have to do that if the Russians are enabled to come back into the fold. So, it's just a conflated view. I'm not sure why that view has gained traction. It's factually incorrect as to how it works. So that's how we view it.

Erik: The next narrative that you'll hear is major new supply is coming online, and that's going to resolve all this. I'm not sure, there must be a mine called Major that I'm not familiar with, because I know the Dasa mine is very much in in jeopardy in Niger. I know that Encore, just tanked their stock because they completely missed their production targets and fired their CEO for it. I know that Rook I is delayed till at least 2030. So, the mines that actually have names seem to all be running into a lot of production hiccups. But this other mine called Major Supply is coming online, apparently, is going to solve the problem. What's Major Supply?

Mike: Yeah, you know that we've been looking for “Major Supply” too, and we don't see it, and we think we know every uranium mine out there and the all-in sustaining costs and the incentive price required to start it. The reality is, look, since early ’23, if you looked in January ‘23 and you said, let's go look at those brownfields that are out there right now, you probably would have seen upwards of 8 million pounds of uranium that was supposed to be produced this year. Let’s frame the supply, 150, 160 globally. So not nothing, nothing to sneeze at, was coming online. Let’s fast forward. And they were coming online, and they put their all-in sustaining costs out there. And let's fast forward to today. You know, you're down almost 50% in what was supposed to come online. Why? Because uranium mining is really hard, and it's really hard when you're trying to restart, and especially in the United States, where the ISR mines are supposed to be coming on and producing, these are not major mines, but they all add up, 700,000, 800,000, 600,000 and are missing by two thirds and a half. So, all in, you have almost half of those pounds not materializing.

And the other thing you're seeing is the costs from early ‘23 to the cost, that what the companies claim they are to today are almost 50% higher. And so, it's really challenging bringing on brownfield supply. As far as new supply, everyone's promising that if you go back and look at some of the major projects you mentioned, Rook I, the Arrow project from NexGen. In full disclosure, we own a reasonable amount of NexGen. You know, this project, you can go

back in ’23 they were all coming online, they were getting approvals. And at ‘23 they would get approvals, and it would all be starting then, it was going to come online by ‘26 and then all of a sudden, it's coming online by ’27, ’28. And now, by the time they get their hearings with the government, you're looking out, when you look at the timelines, to your point, 2030, 2031, right? You start to push out there. And then that's if everything goes perfect. And Erik, you've been around mining for a long time, as have I, I don't know projects. I could count probably on one hand the number of projects that come online, and on time, without several year delays. Why does that matter? If you just took NexGen, for example, the Arrow project, they can produce 8 million pounds as much as they can produce 30 million pounds because of the ore body, because of the project, they have the flexibility to flex up or down. The market tends to ignore that, the market tends to just see 30 million pounds coming, but people forget. Also, you talk about the major mines, let's not forget strategic value of major mines, right? Said mine that wants to be developed and brought online, which is likely 2030, 2031, which, now, if you said 30 million pounds a year is three years past what the market thinks today is coming on, where's that 100 million pounds coming from? That doesn't exist, right? So, you're pushing it out there. And then you got to understand the strategic value of an asset like that in the Athabasca basin, where other major miners are, that have mines expiring in the mid 2030s that would fit beautifully into the development project into 2036, 2037, and could possibly never see the light of day before then. Now, where you're going to come up with a couple of 100 million pounds? It doesn't exist. You have other projects up in Canada that could come online, again, the same thing. Everything gets pushed out to the right. So, we don't find that major mine. What doesn't get talked about are these production cuts that or these supply misses, we've had just now a flood in Namibia, which has caused Paladin to withdraw their guidance. It's a reasonable size mine, at 6 million pounds per year. What doesn't get talked about is, who else are their neighbors, 30,40 miles away, the two big mines that the Chinese own, the Husab mine and the Rössing mine. Well, there were floods that caused Paladin to pull their production. You think you're going to know if the Chinese had had production challenges? I mean, there was a reported mine in Russia, a flood, a couple of weeks ago. You don't hear a word about it. Not one of the bigger mines out there. There's flooding in Kazakhstan, the serious flooding, you don't hear a word about it. So no, you have to look at the supply deficits on a structural basis. Again, you don't have to do anything. But the way we look at it is, is there enough economically viable supply to meet the contracting that is starting to kick off now? And no, there's not.

Erik: Let's talk more about those structural deficits in specific. Because what a point that you've made in previous interviews is you've said, look, this whole uranium nuclear market is an investor's dream. Because unlike other markets, you know, the oil market goes up and down with the economy. You turn these nuclear reactors on, you know exactly how much fuel they're going to consume. It doesn't change, and it's predictable, years and years in advance. And similarly, you know where all of the mines are. So, you've made the point that it's easy to analyze very carefully and very accurately and get that supply demand deficit, or surplus, right. Yet, despite the fact that you've described this as an investor's dream, it comes easily, there's a lot of variance in these supply demand models. There are some analysts out there that are saying the market is going to be oversupplied for the next several years. I mean, I just don't see what data they're looking at. Do you think about this in terms of what the other view is?

Mike: Yes, absolutely. And look, you have to, again, this industry is unusual, right? It's driven by a bellwether forecasting firm. You build a supply-demand model. We're going to build a primary production, and so supply and demand, and there will be secondary sources of supply, but the market will determine that. The market will determine what the price of inventory will be. The market will determine what the price of other secondary sources is. So, when you look at primary supply and primary demand, you are, and again, you have to use enrichment math to understand the demand side of it, and there could be a variance there, and it's based on enrichment capacity, but you're looking at significant structural deficits. It could range from 10, 15 million pounds a year, depending on your enricher math, depending on what assumptions you make on supply to in the 30s and 40 million pounds per year, as you start to get out into the ’27, ’28, ‘29 and ‘30s, right? What you will see though, that some companies and some analysts cut and paste industry forecasts that show balanced markets by using inventory drawdowns, Russian sources of secondary supply, US government sales that haven't been sold in six years, Russian supply being sold into the market of 6, 8 million pounds a year, that there is absolutely no proof of, that they're a net importer of uranium. And what winds up happening is, those same models are why we started the fund in 2018, it's why I've been investing in this space, because it's not representative of price discovery. You can't change every quarter inventory drawdowns and balance the market by moving around secondary sources of supply, those cost something. The price of uranium was $18 at the beginning of 2017, it's $64 today. If you look at the curves of the forecaster, they weren't predicting that. It was so off. It was so dramatically understated back then. Of course, inventories will solve, but they come at a cost. Just like economic supply will solve. You can incentivize new production, but at what price? And so that's where you're at. As we look at it, my bet is, having done a tremendous amount of, look, we were buying this stuff when it was $18 and $35 in spot. We're now at $80 in term, not $35 and you're now at and much higher on the market, and your spot price is 3x that. So, our bet is, our continued analysis of the industry forecasts that we got right last time, are continuing to be right for the same reasons, except we have more conviction now than when we started then, because we have a lot more body of work to draw from, and a lot more contacts and a lot more everything else. So, I don't know what they're looking at, and I actually think the onus is going to be on them to try and figure it out, because we think they're wrong and dead wrong.

Erik: Okay, so you do understand what they're doing, you think they're dead wrong. And the thing that I just can't get past is, look, within the hedge fund community, at least there's kind of three rock stars in the uranium corner of the hedge fund world. That's you, Guy Keller at Tribeca, and Art Hyde at Segra. I don't know Art personally, but I do read his tweets, and I know that his view is very much in line with yours. I talk to Guy Keller all the time, I know Guy reasonably well. I know his view is in line with yours. The rock stars are all saying the same thing. Who are the other people listening to? I mean, as far as I understand, UxC is a very well-respected reporter of data, but I don't think they're like a market forecaster extraordinaire. Is this big banks? I mean, who’s coming up with these forecasts, and why are people listening to them?

Mike: It's a good question. I don't even think it's the banks. I think it's, and look, I applaud short selling. My first decade of my career, I was a short seller. I think they play a valuable role. I think they help price discovery. So, you've seen a very big short interest develop in the uranium space. And like you said, there's a lot of smart people in the place. I can only draw off my own experiences and speaking with them. I was asked to speak at the Goldman Sachs conference in January. Adam Rodman, Art Hyde's partner and I were on a panel, answering questions, the two of us. And I got to visit with a lot of different investors down there, and obviously very smart, very pedigreed, super smart guys, nice guys. I felt as though, and most times in most industries, it's hard to think you have an edge. It's a tough industry, investing, in general. I came away from those thinking that a lot of the reasons they were short were more short term focused, focused on the spot market, which is fine, that's their prerogative. And in the short term, prices have pulled back, different time horizons, maybe different investor bases, I don't know. But I think, again, prices are up significantly from when we started, based on our analysis. And I'll continue to believe that I don't think they have a very informed view of certain things based on my conversations there. And at other times, I think they're conflating a lot of facts. I'm not so sure they care, as long as the momentum is on the downside, but now, that changes. Because what winds up happening is, in the last cycle, it was a series of little things. And everyone ascribes last cycle to Cigar Lake flooding. You'll hear that a lot. It was the Cigar Lake flood that kicked off the market, and that's what sent everything through the roof. And it was all what worked. They forget that prices went from 7 to 60 before that happened. And then they had a big spurt. And then it didn't last long. The market was healing, and it was a series of a fire at a mine, a missed delivery at a mine, a small miner flooded a mine, a series of little one offs that the market just kind of brushed off, and inventories were being sucked down. Remember, I don't know if I mentioned, but replacement rates for a decade before the last contracting cycle in ’05 started was at a third of consumption. You had the same thing here for a decade. It's been a third of consumption. Now it's pushing 70%, the year before is 85%, so you're getting there. And what have we had? A series of one off, the flood, you've had some mine issues, and you've had inventories being sucked down to where there's not many left. People conflate the fact that spot is down, thinking, oh, my God, there's too much supply in the market. It's ridiculous. The spot market is not, that's not what the market is. Again, it's 70% of the traders whipping pounds back and forth, four or five times, churning them back and forth, and you had ANU, the Kazakh vehicle, dumping two and a half million pounds, or the fear of it being dumped over the back half of last year. So, smart people, they're in there. We have different views. And we'll take the other side of that bet all day long.

Erik: You touched on replacement rate contracting. I want to go a little deeper on that subject. Our mutual friend Justin Huhn, over at Uranium Insider, tells me that year to date, contracting is only about 80 million pounds. That's about 40% of replacement rate, and that's as inventories have already been mostly depleted. I mean, they used to have years and years of inventories. Now they don't. They're only contracting at 40% of replacement rate, and that's happening to the extent there's some seasonality in this market. You know, right now is kind of the end of contracting season, and they haven't contracted. It feels to me like there's some kind of intentional buyers strike being mounted by the utilities. But it also seems to me like the dumbest

possible time for them to be doing that. Is that what this is? Are they thinking they're going to beat the market down to a lower price? Or what's going on?

Mike: So those numbers, I mean, if you look at UxC's numbers, they would say that there's around 25 million pounds so far contracted this year. So, Justin might be looking at different numbers, but be that what they may, what you typically see, like…

Erik: Justin probably has it right, I may have misquoted something. He may be talking about an annualized rate, but he's saying about 40% of replacement rate, like, nowhere close to replacement rate. I think that's the important point.

Mike: It's, like I said, it's not industry. And again, buyers are not traders. They're nuclear engineers. Have nuclear power plants. They're in the market every 5, 7, 10 years. It is a side gig for many of them. They're super smart, like I said, engineers, price discovery isn't something they do every day. And so they're in there discovering price, when they do and where do they do that? Typically, around industry events. So, you have one coming up in April, in Montreal, April 8th, 9th, 10th, I believe it is. You typically will see contracting start to take place there. Then you get the summer low, and then you get the World Nuclear Association in September. So, there is still a very big potential for a lot of contracting to take place. But if we go from 2012 to 2022, you were looking at replacement rate contracting of mid 30s percent, really sucking down inventories, which needed to be drawn down. Fast forward to now. Like I said, it was 85% in '23, it was 65%, 70% in '24. The buyer strike that you referenced, there's a couple of things going on. Number one, if you were a nuclear fuel buyer, and you could have bought uranium at $35 and all of a sudden it was $80 in the long-term market. Or you could have bought some of the spot to top up a little bit when it was %18. And now, all of a sudden, it's $70, $80, $90, $100, you're not feeling great, even though you're not going to get fired. You need to secure supply. So what? They don't love the prices because they moved so quickly on them. They don't look great in that scenario. So do they step out? Inventories are down. But none of them are going to run out of fuel. It's not like they run down to, oh my god, we don't have a fuel load, we have to go get something. You know, they run down to two years in the West, three years in Europe. European utilities have to keep a certain level because Euratom, the agency that oversees them mandates that the US doesn't have, that two years is about the level they're around there right now. So, they'll come into the market. But you got to remember, they have been really preoccupied, they don't like the prices they're paying. They'd rather pay less, but that's not going to stop them.

So, is there a buyer strike? A little maybe, but I think the bigger reason also has been, or as much as has been, yes, buyer strike, they will come into the market because they have to. But also, the uranium enrichment and conversion has spent taking a lot of their time. Another thing that we should touch upon is, they don't know what's going on right now with tariffs. Is Canadian uranium going to be tariffed? If I have Canadian uranium stored in the US at ConverDyn, one of the three converters, where you store uranium and convert it to UF_6, and I send it out to France to be enriched, and it comes back. Am I paying a European tax on top of that? It's not clear. So, again, they're not playing heroes. They're not going to get in trouble for paying up for it. They

will get in trouble if something happened that wasn't that was unpredictable. So, they're going to see how the dust settles, see what happens if the tariffs, you know, the war ends, like we said earlier, it frees them up to focus on other things, so they'd rather pay lower prices. I don't think our view is, that ship sailed. They should have been contracting a lot longer time ago because of the deficits. And again, I go back to what goes down in volume 25% and the price goes up almost 20 if there's too much supply. And that's what happened last year in long term contract.

Erik: So you and the other rock star hedge fund managers all see a supply deficit, pretty much as far as the eye can see. And I know that you're all working from conservative numbers, where you're just saying, look, we're not going to count the speculative what if somebody built a new plant, we're only going to look at what's under construction. If I look at something like UxC's uncovered requirement estimate for utilities, again, based only on the stuff that already exists or is under construction, not just hoped for, but they're building it right now, and they're buying fuel for it. They're saying there's about 2.1 billion pounds between now and 2040. First question is, do you agree with that number? How accurate do you think it is? But also, let's talk about the number nobody ever talks about, which is, if you take Chris Wright at his word and say, okay, the United States wants to mount a global nuclear renaissance, which is going to change the course of history. If that really comes true, we really are going to triple nuclear by 2050. What does that mean for that number of how much is uncovered between now and 2040? And is it even possible to ramp up supply at any price in order to meet that much demand?

Mike: So, the 2 billion+ in the ballpark, yes. It sounds good. It's a nice story. It's a nice narrative. Nobody cares about 2040, right? Investors care about either the here and now spot, or they care about the more nearer term, you know, a couple years out. I think, right now, just to solve the near term, early 2030s problems, you need a couple of these big projects that aren't even there yet to solve those problems. The market will figure that out. The prices are up now because there's not enough economic supply, and that will continue to happen. I'm always a little, after being around this industry now for as long as I am, and I say it's broken because incentives on the, again, fuel buyers aren't traders. They're not incentivized to buy low. They exert unusual power over the suppliers until they have no choice, because there's not enough supply like we're entering now. But I look at like, for instance, AI and data centers and to build out married up with nuclear power plants. And you take an industry where AI, big tech, they're world beaters, move fast, break things. And if somebody else can't do it, we'll do it ourselves. Versus senior, you know, versus how nuclear utilities are run. Your utilities, move slow and prove it to us, right? I don't know that that marriage works. So, timelines, it all sounds great, triple, double, quadruple, whatever it is. I mean, look, I like nuclear. I think it's clean, I think it's safe. It's clean. It solves a lot of problems. I'm worried about the near to medium term. Longer term, I can't see the industry building at the clip that they would like to clip. I think they'll build enough to where there's significant shortages, and the price of uranium is going to go parabolic. But with that other stuff, I don't get really too caught up into that, because that's why we don't model any of it, because it's down the road. And my experience watching nuclear, nuclear utilities down the road, everything gets, the can gets kicked to the right all the time. So, I don't know if it will be for investor purposes. For my purposes, I don't care if it happens or not.

Erik: Let’s come back to something that's much shorter term then, which is, as you've said, there's a huge amount of short interest in this market. As you've described, or at least as I've understood in this interview, you're saying, basically those shorts are, tend to be momo traders. They're following momentum lower. They think there's this story about the Russia war ending, which doesn't mean what you and I think it means, if they get proven wrong. And clearly the trend right now is down, I think it can continue further down. But when, if and when the market turns and we get into a short squeeze kind of situation, and all those shorts have to cover, how much short interest is there? How big would that short squeeze be? How much of an impact would the shorts covering have on the market recovery?

Mike: Yeah, it's pretty significant. I mean, some names, some companies, it's 5%. Other names, 20%, which is, as a percentage of float, which is quite high. And also, look, as a guy who, for 20 plus years, did a lot of short selling my first 10, I was a dedicated short seller. Like I said, I always respect the shorts. I respect their views. I think it's healthy for the market. The higher the short interest, could mean they're right. It could mean, if they're wrong, then they have to go cover right, which in thinly traded names, makes it a little bit more difficult. So, the opportunity, if one's making a bet that prices have to move higher, and there's some short-term disruptions in the market, like we're seeing now, because people are focused on spot. They're worried about, we think they conflate the Russian view? Yeah, that does lead to the fact that there would be a lot of things. And look, the shorts, they figure things out, right? If you want to talk about the spot vehicle now, but you know, that's one thing we also think is being conflated in the market.

Erik: Let's talk more about spot because I'll tell you, I have a very, very strong intuition that spot is broken. I don't mean to criticize Sprott for the way they are managing, but I just mean the function of spot and how it affects the market, particularly the way where as soon as it gets close to NAV, where they might start accumulating more physical metal, all of a sudden, it gets sold down. It almost feels like there's an invisible hand there. What's going on? It seems like it's broken. I can't figure out why and how it's broken.

Mike: So spot, it's just, it's a physical vehicle that Hoover's up, uranium did, right? They have 66 million pounds early on in ’21, ’22, they took a lot of pounds off the market that were floating around, right? You still had this overhang from Fukushima nearly a decade later. And even though, like we talked all about spot first term, it still mattered, starting in ‘23 though it became less effective. Like I said, when you saw the price go from 55 to 106 from July of ‘23 to February of ’24, 33 million pounds traded in the spot market. SPUT was 6% of that volume. And since then, it's really done nothing. It's been trading at a discount most of the time. And what you see, a lot of the folks who are short, what they'll do is they'll short other equities within uranium, and they'll go by SPUT when it gets to a 10%, 12% discount, and then it gets up to a 2% discount, and they pound it, they sell it, right? So, they've made some money. It’s a nice trade for them. They've made some money. And then if, in their view, if SPUT, because they think, SPUT, like psychologically, plays a role on the market, and at times, it does. So, if that's going to happen, they sell it, and then the equities that they're short will make money, and it's wash, rinse and repeat. And first, that's one way of investing. Everyone has different ways to express their view,

right? That's presuming that that SPUT is so critical to the market, if SPUT's in there or not right now, it would be nice if they're issuing, I guess, yeah, they can buy some. But, like, there's no offering in the market right now. You know the last price of uranium sitting there after the ANU vehicle that I mentioned earlier from Kazatomprom, you had that hangover start to work its way through the market. The traders, who were afraid it was coming front, ran it and sold their pounds like they couldn't sell them fast enough in the fall and the early winter, and then you started to sell it, settle into a price you've had a series of, like I said, events, floods, other challenges, production challenges. And what are you starting to see? You know, in a day like today, where it's last Monday of the month, you typically would see these things start to sell off in the physical market, especially when there has not been a lot of trading taking place. We are a physical market participant. It's hard to find people who want to sell you uranium right now.

Now, that doesn't mean the price uranium is going to rip. It means for the last couple of weeks, you haven't had desperate sellers, guys who are, like I said earlier, who are the participants, they're flipping. It's a game of hot potato. I have 100,000 pounds, 200,000 pounds, again, 200 million pounds of demand. We're talking de minimis volumes. But, if the utilities, who barely buy anything there are not there, or the producers aren't buying, which are a very small percentage, if the traders are not feeling comfortable with where the market is on the short term, the here and now, because they don't know who they could sell it to, it could pressure. Today, you would have expected that offer to come down, because there they could be pricing an off take agreement, right when they do that, you typically see the price be walked down a little bit in the industry. That's what typically happens. Didn't happen today. You do see if, when we do our due diligence, like I would think others do, that there are some producers in the market right now starting to buy uranium that are starting to keep a bid there, starting to sit there and sniff around there, because these levels seem to be where there's not desperate sellers. We've got the ANU stuff kind of understood. And you're at that level where also, very important to understand, Erik, the carry trade becomes relevant again. If you can buy uranium at $65 and carry it, and your term pricing is $80, all of a sudden, you do your math on your carry cost, and it takes you out to 2028-ish, 2027, 2028, and it's a four, it makes sense to do it here. So, what does that mean? That means, if a utility is going to do a carry trade, that means there's going to be demand coming into the market, and you're starting to see the carry trade reemerge, where you start to see that occur that puts a bid underneath the market.

So, the role of Sprott? Yeah, it's nice to have, but I think also what people need to recognize is, there's always two sides to every story. So, while Sprott is trading at a discount, and as it gets up to the 2% discount, and why does that matter? Because it only issues equity at NAV, or at a premium to NAV, and so Sprott has, I don't know, almost 10 million or so worth of cash. They probably have four or five months worth of cash. And there are some people out there who are short it that say, well, they're going to have to sell uranium. Oh my gosh, that's going to break the trade. There's 60 million pounds. Okay, well, let's just step back. So could Sprott sell uranium? All the other trusts have a relief valve where they occasionally will sell a product into the market. There have been many investors I know, that have been wanting Sprott to do that, just to manage NAV a little bit, manage the NAV, take a little pressure off a bit. They've chosen not to do it. So, could they sell a couple 100,000 pounds and raise $15, $20 million to whatever

they sell? Yeah, they could. That gives them cash for a really long time. Do we think that that would cause traders to freak out? No, because I think it's been around long enough. I think it's understood the role of it. I don't, sorry, we don't think that. I think it would cause utilities to go, aha! Here comes 65 million pounds. We knew that that was going to happen. We don't get that view because we think, again, it's sort of come into the fabric of what it is. So, we don't feel that would happen.

But then there's the other side of it, right? We would think it would be short sighted for somebody on the other side of the trade to not appreciate that there are also uranium bulls. And uranium bulls who have a lot of conviction. And, I don't know, what if one option that SPUT could do, and I have no idea if they're going to do it, but could they? I think so. Would I think there would be people to do it? I certainly do. Who said, you know what, we're trading at a 5, 7, 8, picking a number discount. We're going to do a placement with people who view uranium is going much higher because there's a structural supply demand deficit, and they're going to buy it at NAV, or maybe NAV in a few cents, and we're going to raise money and go out. And with that, we have enough cash to take care of our needs for quite some time and maybe there's enough capital that we're going to raise money and go buy uranium. That's not on people's radar screen, at least as we hear the story, but there's two sides to everything. So, while it's very consensus and very momentum-y right now, and momentum is fine, and again, but I would think that there's always another side of the story. And so, people have different motivations and people have different objectives. And so, I think, when the pendulum swings too far, and to your point, there is just too much going on on the demand side, and way too many problems on the supply side. That stuff happens, things break, and the story that looks so good and so tempting to want to be on one side of it doesn't work. When that happens? Can't say. Are all the ingredients there for that to happen? I think so. And then when that dam breaks, that's the bet we're making.

Erik: Let's talk about the other big elephant in the room. As I see it, because I agree with you, Mike, that it feels to me like if you look at the uranium market in isolation, it feels to me like we've already seen the retail capitulation. The panic is over. I'm seeing signs of exhaustion. Feels like we're really close to grinding out of bottom. But the really big but is, wait a minute, what about a broader market risk event? Because we recorded this, as you said, on Monday afternoon, the 31st of March, be several days before our listeners actually hear the interview. But as of right now, we almost retested the low from back on the 13th of March. Didn't quite get there. I don't know what's going to happen next for this market, but it feels to me like maybe we're headed towards an actual cyclical bear market on the S&P, that'll be very news flow dependent, depends on what comes out of the Trump administration and so forth. But let's do a thought experiment, Mike, let's pretend that over the next six months we have a cyclical bear on the S&P, we get down to, let's say, $4500 for sake of a round number on the S&P, how bad do you think it's going to be for uranium and uranium miners? Is it less than proportionate because we've already seen that exhaustion? Or is it more than proportionate because there's so much retail participation and there's so much volatility in this sector that, you know, we could see a washout?

Mike: That's a great question. Look, I think it's hard to be immune from a bear market. I think capital gravitates towards growth. Capital gravitates towards things that are working right. So, if a terrible bear market happened today, what happens to the marginal uranium mining stock? Probably gets hammered a little bit, who knows how much. To a big, major producer, probably less so, right? Because, you have to look at the end of, and you know, Erik, there's very few ways to express the view here. If you're an institution and not a retail investor, you don't have a lot of ways to express the view. And so, you're probably gravitating towards the quality. And if you're running a very small fund, or if you're a retail investor, you would gravitate towards some of the, you know, they tend to gravitate as well, from what I observe, as to the riskier names. In a very bear market, yeah, they probably get hit. But I do think, again, you have to balance that with, we think the market is teetering on the edge of something really nice happening. So, if, for whatever reason, you start to see again the turn price, which we focus on, sometimes nobody cares, sometimes they do. Right now, they don't. But if the spot price were to start turning all of a sudden, you know, people have short memories. So, the real answer is, I think it comes down to portfolio management. It comes down to understanding where you are. It comes down to risk control. If you're fund can offset it. You could put some hedges on you could have a little bit more cash. That's up to every individual. I don't think anything is immune, if the market really craps the bed.

Erik: Final question, Mike, let's move on to the other side of that, which is how good it can get. As I've understood your analysis, basically what we're looking for here is, once this market does turn around, eventually we're going to have a realization, which is that there really is a supply deficit, which you and Guy Keller and Uranium Insider guys and Art Hyde and everybody else have been talking about, it goes out for several years, it gets worse in the 2030s. The only way that we're going to be able to incentivize more green lighting of new projects in order to bring new supply online that's urgently needed in order to supply the fuel needs that we're going to have in the mid 2030s, is higher prices. How high does the price need to get before we can start green lighting, new green field uranium mines around the world in order to address this long-term structural deficit?

Mike: It all depends on the cost curve and where you are. Let's just put something in context here. 2018, 2019, because Kazatomprom going public, they put out an IPO prospectus, I don't know, 700, 800-page document, and they lay out what their costs are going to be through 2040. At the time, they're all-in sustaining costs were $13, $14 a pound. They were predicting by 2024-25 they'd be $11.50. They were using a 340 Tenge, as you know, if you cost in a foreign currency and it depreciates, your margins expand. It was 340 Tenge, they were going to produce at $11.50. Fast forward to 2024, their all-in sustaining cost is going to be around 30 bucks and the Tenge's at 500. So the Tenge has depreciated by another 40%, should be a tremendous lift to them, and their costs are 2.5x what they were. Now that's the lowest cost producer in the world. When we started our exercise and our study back in research, back in '15, we thought, okay, the all-in sustaining cost is not what the forecasters say it is. That's a cash cost, non-sustaining cost in the mid 50s. So, you got to get somewhere in the $70, $75 range. I mean, throw that out the window. So, you know, can the Big Mike and Arrow come on, you know their costs are low and Denison's Wheeler River, their costs are really low. But again,

you need multiples of those to solve your deficits. So now you start getting into, where are those mines coming from?

So, when we look at it, we think you need at least, and again, I think we're being conservative, because our cost assumptions, we haven't dramatically increased, even though we know we could, I we think that you're somewhere between $90 to $120 a pound. Now, let me just put this, this is, I think, a very important point. And I want to put a fine point on it. In the last uranium cycle, when the price of uranium that it gets, like I said earlier, the Cigar Lake flooded in 2006 in October, gets ascribed the reason why we saw the bull market start, it's wrong. Prices went from 7 to 60s beforehand. It went from 60 to 137 after that. But if I was a fuel buyer and I was looking at the latest forecast coming out of the banks, coming out of UxC, I would have seen a 125 million pound surplus over the next six years. Why do I say six years? You could pick five, you could pick seven. It was right in the ballpark, because that's what a typical contract would be. So, in October of '06, before the flood, and what was the flood, Cigar Lake was coming online. And '07, 18 million pounds, the biggest mine in the world. Well, it flooded before it ever opened. So, if I'm a fuel buyer, I'm looking at the numbers. Over the next contract period I have, there's a surplus of 125 million pounds in the market. The flood comes, by the time the next report comes out in the first quarter of 2007, the updated forecast for the same six year forward period shows a 225 million pound surplus. How did that happen? Well, the forecasters just happened to find some more mines that would come online, and they just happened to find some lower demand, just, it happened. And but what happened? The price went from the 60s to 137, they couldn't contract fast enough. Fast forward to today. What are you looking at in that same scenario? Hundreds of millions of pounds of deficits. So, they over contract, not over, but they contracted like they couldn't, like they couldn't do it fast enough. When there were surpluses in the market. There were deficits as far as the eye can see, the moment somebody flinches, it's that one utility. This isn't the major three or four US utilities or the major Western Europeans. They're as sharp as they come. They're covered for the next three or four years, but they're still contracting for way out in the future, they're buying a lot of uranium. They will be buying a lot of uranium. We're talking about the marginal, just like there's a marginal producer, there's the marginal buyer that just let it go a little too long because they have one or two reactors. They're rarely in the market, and they just got caught asleep, and they have to pay what they have to pay. And when that happens, then they all pay. And that's where we think we are right now. See

Erik: I see something even bigger than that on the horizon. And this may be wishful thinking on my part. I definitely am guilty of that sometime. But I think that these utility buyers, from everything that I can see, frankly, are not that smart and not paying very close attention. I think that at some point they will, and if I was the utility buyer, and especially if I was the manager who's responsible for the economic interest of the utility in what it costs if they run out of gas, if they don't have any fuel. And if you start to look at how long these deficits are, and you see the uranium price really start to react, and you finally get your shit together and you do some analysis, the conclusion you come to is, oh, shit, this market is going to be in extreme deficit for the next 20 years, especially with this nuclear renaissance. And the only sane thing for me to do it, whatever price I have to pay, is to sign contract, term contracts now to cover my ass for the next 10 to 15 years. We're not used to doing that. We don't normally contract that long. But I've

realized as, because I'm finally smartening up, I've realized that I better do this before everybody else does. When you get to a FOMO situation where the other plants are saying, wait a minute, this prominent guy just signed a 20-year contract with Cameco, why the hell did he do that? And why did he pay unlimited ceilings on a 20-year contract? He must be stupid. He must be incompetent. Wait a minute, it's the most respected guy in the industry just did that. What just happened? When that wake-up moment happens and everybody else rushes in to say, we all better contract for the next 20 years, if you're Cameco, you're saying, oh, guys, we don't have enough supply to allow you to contract at any price for the next 20 years. Then what happens?

Mike: Erik, you just nailed it. So, in the last cycle, as I mentioned, the incentive price needed to be $65, they paid $137 with the surplus in the market. Today, if you need $120 incentive price, are they going to pay $200, $250, $300? If Arrow, because it's such a strategic asset, if Arrow winds up in the hands of a corporate that finds the strategic value of it, or a sovereign wealth fund, where those pounds aren't in the market, where does prices go? Then they go parabolic. So, that's just one example…

Erik: So they can afford to pay double, easily?

Mike: Oh, absolutely, of course they can. Now, I will say one thing, and I, again, I'll give you one minute background I have with the fuel buyers, and they are smart, but they're not commercial because they're not paid to be. So, they're nuclear engineers. They're off the charts smart, far smarter than I am, but all I need to do is fourth grade math, and I get paid to do fourth grade math. They don't get paid to buy low, they get paid to secure uranium. They're engineers, and they're stubborn as hell. And let me tell you something. I went to the NEI in 2018 and I said, I think the industry forecasts are wrong. The NEI is the largest trade body in the world, representing the interests of nuclear power plants in the United States in Congress. And I said, you know what? I don't know uranium like you guys do. I don't know nuclear power, but I've spent the last couple of years doing this math, and the industry forecast is wrong, and these guys are going to get run over. After them telling me I get lost, they finally listened to me, and they let me present to their internal team, and they asked me to present at their annual conference. And I did that in the fall of 2018, and I stood in front of a room full of, I don't know, 40, 50, 60, 80 fuel buyers, whatever there might have been, and I said, you guys have done a remarkable job. You've stayed out of the market. The price of uranium is in the toilet. Kudos to you. I think you need to start contracting now and let me tell you why. And I laid out, and I couldn't have reaped more praise on them. I got off the stage, I came over, and I got accosted by fuel buyers, by industry people, telling me I have no idea what I'm talking about. The price of uranium will be $10 before it will be $30, and not a single person amongst all those fuel buyers said that's an interesting viewpoint, can we sit down and talk? None over the years, I've spoken to many of them because I have to make the effort to do it. NEI asked me back in 2019 to do the same thing, and I laid it out even more. I laid out where the numbers were wrong by the forecaster, laid it out, and I said, these aren't my numbers. These aren't my forecasts. This is where the industry forecasts are wrong. Same reaction. I got taunting emails, I got taunting calls. I was told I had no idea. In now, over 30 years of being a professional investor, where, as a short seller, you're talking to everyone in every industry you want to learn to peel the onion

back. I never had that response. I never one time had somebody on the other side who was buying something telling me that I had no idea what I was talking about. When this was basic math and they wouldn't even listen. So, when the prices start moving, they'll get their faces, you know, they'll be turning red, they'll be blushing, they'll be the oh my god. That's what happens. That's my conviction. I've seen it firsthand. I have been in this space for so long now, and by the way, like I said, prices and stocks are up multiples, so we've been very pleased with it. But I know this cohort, and this cohort doesn't give a shit what anyone says, until they do, and when they do, they will run over people to buy uranium. That's how we feel about it.

Erik: Well, I don't even know that it's necessarily the same cohort, because if I was the C suite executive, the guys, you know, the boss's boss of those buyers that you're talking about. And I am paying attention, because I am the long-term thinker. That's my job as the executive vice president of the company. And I am listening to what Chris Wright is saying about the US mounting a, and I go and I find out you guys have only got the next four or five years covered in terms of term contracts, are you serious?

Mike: Yes, you're 100% correct.

Erik: When that guy wakes up, I think he just fires all of his fuel buyers. Or maybe, you know, they're smart nuclear engineers, he puts them to work doing something else. But he says, we got to get smart about this, and we've got to get people who come from the commodity trading industry, not nuclear engineers, who understand the upside risk, people who are not professionals don't understand that risk on the right tail is just as risky. It's just a question of who it's risky to. We need to understand right tail risk, and we need to hedge the hell out of it, because if we wait until everybody else is hedging that right tail risk, we're going to get run over. And as soon as somebody's smart enough to see that, and then everybody else catches on and starts chasing them, it's a whole new game.

Mike: Yeah, absolutely. Look, it is one of the more perplexing things I've ever seen in a very in a long career now, makes no sense, right? And again, periods of time, narratives change. So, spot price coming from $106 to $65, investors will say, oh my God, too much supply. That's why they're not running out. Again, different markets. And I again, I'll say it for the third time, and I'll be repetitive. Term volumes were down last year, and pricing was up high teens. That's because anyone who's going into that term market to contract is not getting favorable pricing for them. Why? Because there's not enough of it. And so, yeah, to your point, how the C suite of a nuclear power plant, especially that's a merchant one that has cost, that should matter, not regulated, where they could just pass it on, where they are not paying attention to what's going on but you know what happens? The C suite in some of these plants, it doesn't even get to them. It is a middle management is where it begins and ends. It's a stunning structure. And what I go back to, I said earlier, it'd be great if everything triples and doubles. That's not this nuclear industry. That is not how it works. My experience in dealing with them has been unbelievable. Again, like I said, smartest guys in a room, but sometimes you're too smart by half. And they could have been buying uranium long term contracts at 18 bucks and $20.22 and now they're

paying $80. And they still are too smart, and they still are the smartest guys in the room, and ask them, they'll tell you.

Erik: Well, Mike, I can't thank you enough for another terrific interview. But before I let you go, please tell our listeners who want to follow your work, your Twitter handle. Also, for the benefit of our accredited investors and institutions who are able to invest in hedge funds, please tell them contact details. I know you don't do the investor relations yourself, your partner, Tim does that. How do they contact the IR guy?

Mike: My business partner, Tim Rotolo, he is at ir@sachemcove.com, if anyone has any questions, general inquiries that Tim's happy to answer.

Erik: And what's your Twitter handle?

Mike: @FootnotesFirst

Erik: And I shouldn't even say Twitter handle, your X handle is @FootnotesFirst.
Patrick Ceresna and I will be back as MacroVoices continues right here, at macrovoices.com.