MACRO Voices
with hosts Erik Townsend and Patrick Ceresna

Mike Alkin: Uranium Fundamentals Couldn't Be Better

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Erik: Joining me now is Mike Alkin, CIO and fund manager for Sachem Cove Partners. Mike has prepared a slide deck to accompany today's interview. Registered users will find the download link in your Research Roundup email. If you don't have a Research Roundup email, just go to our homepage. macrovoices.com, look for the red button above Mike's picture that says, *looking for the downloads*.

Mike, I can't believe it's been four years since I've talked to you. I want to just let our listeners know that because of my travel plans to the World Nuclear Association conference in London, we recorded this interview fully eight days before you'll hear it, way back on August 28th. So please excuse us if we don't have the latest market news. Mike, I want to start with the structure of this market, because I think, frankly, a lot of people other than yourself and a couple of other real pros don't really understand it. So let's start with the simplest question. You know, if I'm running a trucking company, I don't have to buy crude oil and hire somebody, contract with a refiner to refine it. For me, I just buy diesel fuel, if that's what I need to run my trucks. Why do utilities have to buy unrefined U308 yellow cake uranium and then contract with a conversion and enrichment? Why don't they just sell nuclear reactor fuel in a finished product market?

Mike: That's a great question. Well, first, thanks for having me again. It's a pleasure to catch up again. So, historically, the fuel buyer, and let's understand what a fuel buyer is, right there. Most fuel buyers are nuclear engineers. And if you think about this, the market is defined by one where about 80%, 85% of the pounds that are purchased in a year go through a long term contract market from three years forward from the date signed. And it could last 5 years,7 years, 10 years. That's what a term market is. That's the vast majority of the pounds sold. And on occasion, the spot market comes into play, which is 15%, 20% of the pounds, depending on the year, sometimes a little bit more. Post Fukushima, there happen to be some pounds backed up. That one went away at the spot market. But if you're running a nuclear reactor, you can't switch to natural gas or coal, it is what it is. So, security of supply is paramount.

So the folks running these are very smart people, but they're infrequently discovering price. They're not in there, they're not coal traders or natural gas traders or oil traders. They're in there very infrequently. And what they do is they want to control the process, right? If you think about the nuclear fuel cycle, if you're buying coal or gas, you're not talking about the coal cycle, the gas cycle. You buy it, and pretty soon it's at your plant gate. Here, you're talking, it could be upwards of two years, right? U308 is mined, it gets converted to UF6. UF6 then goes to the enrichment plant. That gets enriched, then it goes off to fabrication. And you're saying, like, why

don't they just buy EUP? Sometimes they do just buy EUP. They can go into the market and buy enriched uranium product, but most of the time, they want to control the process. They want to be in charge of what shows up and where, and they want to know they have that capacity, so they contract at each step along the way. And to know the fuel cycle, there's a product in the fuel cycle that's U308, that's the uranium that comes out of the ground, and then from that point forward, their services. So, conversion is a surface converting U308 to, ultimately, U308 becomes UF6, and then UF6 becomes enriched, and then it goes to fabrication. Those are services that take the natural uranium and convert it in.

And so, the utilities want to control each step of that plan, sometimes they might, they'll do a little horse trading. They might take in some enriched uranium product, some EUP, and in that, there might be some conversion, there may be some enrichment, there's other things that they could strip out and they could sell to others. And you know, that's getting deeper into a route. I don't want to go down a rabbit hole, but they want to control all portions of that. And so, like I said, their number one job is security of supply, because there is no substitute for what they do. So they want to carry it. And prices of these will move at different times, because at each stage of the fuel cycle, Erik, there are different market shares, and there are different players. For instance, in enrichment portion of the fuel cycle, which is where uranium, U308, by itself is nothing. UF6 needs to be enriched up to 3% to 5% levels to be able to be fissionable and create a reaction. When you're looking about those, enrichment is controlled. Up 40% of the market is Russia, then the West has Urenco and Orano, and so you can get some, you'll have market share there. China has some enrichment capabilities, and so it's very controlled by state owned players in enrichment. So their capacity is tighter, and now, after Fukushima, it was looser. But buyers, in a market where prices are rising and capacity is tightening, they tend to flock to it. To put some context around that, about five or six years ago, the price of enrichment, which is priced in a unit of work called a Separative Work Unit, was about $35 per SWU would be the acronym. Today, a unit of SWU is $176, right? So, it's gone up multiples. If you look at conversion, the act of converting U308 into UF6, that was back in 2016, ‘17, $4. Today in the spot market, it's $68. Why? Because a lot of capacity had to be taken out of the market during the downturn, and the commitments haven't come back in full swing for the converters to not only just bring back the capacity, but add new capacity that is needed. And so, if you're a fuel buyer, it needs to be enriched, so you focus on enrichment. With the Ukraine war, people are self-sanctioning away from Russia. There's a Russian ban in place in the US, so they got to scramble to go get enrichment capacity. And remember, just like there was a massive investment, which we could talk about, in the mine, under investment in capital expenditures in the miners for a decade post the 2011 event in Fukushima, same thing happened in enrichment and conversion. So, scramble goes to get the enrichment services. It goes to get the conversion services. There's a few more uranium miners than there are enrichers or converters. So it's a pecking order. Where do they go? Where's the biggest pinch point first? Now, even with that, the price of uranium has gone from $16, $17 at the low, to $80 right? So it still had a big move. It's just that's how, that's the nature of the business. The fuel buyers control it, and I don't see that changing.

Erik: Mike, so you're saying that 85% of the trading is in the longer-term contract market, only 15% is in the spot market. That immediately says to me that there's a vulnerability to manipulation in the spot market. And I know our mutual friend Justin Huhn has talked quite a bit about somebody banging the month end close, it seems like somebody consistently wants to get that month end close down. Who's up to what? What's their agenda? What's going on behind the scenes?

Mike: So, yeah, the spot market buyers could be 15% of overall, 20% of overall, sometimes a little bit more, depending, you know, post Fukushima is a little bit more, but in that ballpark. But what winds up happening is, it's like anything, Erik, what's the market structure? And it's really important to study the market structure here and know who the participants are. And in the world of physical trading, they're trading very, very near term. That's their time horizon. Their time horizon is in days and weeks and maybe months. It's not in years. And if you're an equity investor, you're looking at structural deficits, which means the amount of economic available capacity that a producer can produce. And that's where you see structural deficits over periods of time. And when utilities go to contract the same amount or more on an annualized basis, then the available capacity, that's where you see it really start to take off. And we're entering that part of the contracting cycle. But in the spot market now, the long-term market, Erik, is only priced once per month, so at the end of each month, two price reporters will attach a long term price to it, and that price is based on a base escalated price that is priced as though it's a fixed price, that's going to escalate by X percent per year. That's how it is in a bear market, priced, and that's how they price it in a bull market. It's not the way it should be priced in a bull market, because very few base escalated prices are being signed in a bull market. The producers, they want exposure to a rising price, so they sign market related prices with floors and ceilings and so it's very important to understand that sticking distinction, but it's only priced once a month. So unless you're doing due diligence on a regular basis in the market, you're not going to really understand what's pricing and what the prices are, not that it can’t be understood, It's just that, if that's not your main focus, you're not going to be spending a lot of time there.

So, instead, what do people look at? They look at the daily price, which is a spot price that is reported. And again, the price is, is de minimis. This year, if you're looking at close to 200 million pounds of demand in the market, we're on pace to do this year low $40 million worth of spots. So around 20% or so of the market is spot. But the traders there, the traders do not sell into long term contracts. If you look at the data over last 25 years or so, what you will see is, they are almost non-existent in the long term contract market, because they can't guarantee pounds typically, right? They don't produce it. They don't have a mine that says, we have a mine life of x. So they're very active. And what do they do? What does the spot market look like? If I look at that 40 million pounds like 45 million pounds, I'm looking in any given year, maybe 20% of the spot market is a utility just topping up another 20% to 25% of that is a producer that oversold their contract, booked their capacity, and they go in and buy some pounds, and then the rest of those are traders. And so, traders don't really have big balance sheets. What they do, they source their pounds from mines that provide off-take, the mines that don't have, that produce, and they might sell into contracts, but they might have agreements with traders for a portion of their production. And so that could be, in a given year, you can have 8 million pounds coming

from Uzbekistan. You could have 5 million pounds coming from the French, you could have 4 or 5 million pounds coming down from Australia. There's one mine down there, but most of the producers sell into long term contracts. So, there's not a lot of pounds that are coming into the market. But what a trader is doing is, they're taking those in the way, historically and up to today, this market gets priced, is they say, okay, well, we're going to deliver it to you every month, every three months, whatever the structure is of that contract, and we'll price it on, it could be the last Monday of the month at UxC, one of the price reporters, on their last Monday of the month, at 4pm we're going to price it there.

And so what winds up happening? What we wind up seeing in the market, because there's not a lot of pounds trading, what you wind up seeing around the periods of month end, or sometimes mid-month, but mostly month end, what you will see is, you can see the cadence of selling, coming from some of the traders, will accelerate. And what they might be doing is, they may be getting, and I'm using, I'm picking numbers, I'm not talking to anyone specific, but they may be getting 300,000 pounds coming in on an off-take, but they might want to sell 50,000 or 100,000 pounds, and there'll be aggressive sellers of those pounds, which they're entitled to do, and they might not otherwise have sold those pounds. So you will tend to see, around off-take times, you tend to see pounds aggressively being offered in the market at lower prices. And sometimes it could move it down a couple of bucks, three bucks, four bucks, and then all of a sudden it gets priced. It's not a moving average of five-day volume weighted average price. It's date and time, and it's a silly way to set up the contracts, but that's the way they're structured, and so it just lends itself to people being motivated to get a lower price when they're going to price their contract, and that's what you see in the spot market. But you know, the spot market itself is not where, that's not keeping the lights on at these reactors. It's just pounds moving back and forth. And a lot of these volumes I mentioned, 40 to 44 million pounds, a lot of that is churn volume. It's trader to trader, trading it back to a trader, and going back and forth. And that could be easily, can be 30% of those pounds. So, of the 40 million, 44 million pounds, could be 30%, 40% of that. You could say your actual pounds that are swishing around the market are de minimis. But because it has a daily price attached to it, that's what people tend to focus on. They don't either have the patience or they don't want to just go spend the time to understand what's happening in the contract market. So it's often very, very misleading, if one stares at the spot price to think that that's where the uranium market is, it’s a big distinction in the market, but one that very few care to pay attention to.

Erik: Now, in any other commodity market, including several markets that are smaller in terms of dollar size than the uranium market, we have very efficient liquid futures contracts. What’s going on? Why… And there is a uranium contract on COMEX, sort of, they use it as a benchmark, but it doesn't have any liquidity in it. What's going on? No liquidity.

Mike: So it's 250 pound contracts. If I'm buying, we buy physical uranium, I'm typically buying 100,000 pounds, at a clip, not 250 pounds. And so it's never, ever evolved into something that utilities or speculators was used as hedging. So there's no speculation, really, in the market. If you think about it, the traders are doing their thing. They're sloshing pounds around, looking to make 25 or 50 cents a pound on 100,000 pound transaction, but the utilities are not using the

futures market. So globally, there's 60 nuclear power plants, there's 400 and something reactors, but 60 utilities that own these things, and you know, they're in the market when they're in the market, and there are cycles where they're contracting. But in the spot market, people say, oh, it went down $5 that could literally mean nothing. It's just like, if it went up $5, it could literally mean nothing. I mean, there was a couple 100,000 pounds sloshing around over time, it's an indicator, right? Art is directionally moving higher over a period of time. Well, that's kind of telling you things are kind of tight in the spot market. But again, if the vast majority of pounds trade in the term market, that's kind of where you want to understand the supply demand dynamics that are taking place. Like, for instance, this year, if I look at the beginning of the year on spot, spot is probably down, I don't know, 10%, 12%, maybe a little bit more, after having a massive run last year, but it came in, yeah, maybe 15% something like that. However, if I look at the term market, this year has been a light volume year in the term market, but prices are up in the low 20% range. So, where the bulk of the pounds will trade over time the term market, there has been a lighter volume year than the prior year, and there's reasons for that. There was a Russian uranium ban that was put into law in the United States, and they're still working through the guidelines and who's going to get waivers. So, it makes sense for the utilities to kind of step back until they know what's happening, and that's starting to come around now, but yet the price is up 21%. Now, Erik, you understand commodities, you're a commodity guy. If volumes are light and demand, demand isn't really strong for that, typically you're going to see prices go down here. It's just the opposite. So, the term market is showing you with very little term demand for what I just mentioned, that it's really, it's a tight market, but yet people still stare at the spot market. And I think it's just, it's what they're used to. And again, most investors, there's not a lot of commodity investors in North America, or, I should say, in the US, most hedge funds don't have a portion of their books dedicated to commodity type names. It's just not what they do. And so now you come into a market where you think, like you said, oh, what's the futures doing? Oh, well, that doesn't even trade. Okay. Well, what's spot price doing? That's got to be indicative of it, yeah. Well, not really. And so, it takes a while for people to figure out the signals in the market.

Erik: Well, I know for a fact we have quite a few listeners who work for CME groups. So I think you guys are missing the boat here. I don't know. You got time to call me every time that you introduce some stupid new mini crude oil something, or rather, that nobody wants to trade anyway. You got time to call me outside of my time zone, but you don't have time to get this contract to be better recognized and used. Is there some reason, Mike, in the industry, that people would not want to use a futures contract, or is COMEX just screwing up with the contract size?

Mike: No, I think it's a really good question. And I think it leads to market structure and complacency. I was just talking about the market structure for spot and how traders, what their incentives are, is short term. If you look at the long term nature and the market structure of a fuel buyer, right? And this is one of the hardest things that I've had to learn since, looking, starting to really dive deep into the sector, and back in 2015, and ‘16 was, I actually didn't believe it for a while. And I would have conversations and you know, where you try, as a commodity trader, trying to buy low and sell high, just like anyone is, right? And what really

surprised me was, because there's such infrequent price discovery, because they're in the market so infrequently, a contract could be 7 years, 5 years, 10 years. And the fact of the matter is that actual uranium itself is mid-single digits to maybe 10%, pick a number, depending on price of uranium. Of the cost to operate one of these reactors, if you're running a natural gas or a coal fired power plant, the feedstock is 80%, 90%, and so what's wound up happening over the years is, there's no financial incentive for a fuel buyer to call bottoms. Their only incentive is to make sure they don't run out of fuel, and because the cost of running it is, and I don't mean to minimalize the cost, it's still a real cost. And in some markets now, in the US, they're all starting to get a lot of help from the government, but in periods where they weren't getting help, and in periods where it was a very competitive market, competing against subsidized wind and solar, heavily subsidized wind and solar, it was challenging for them. But what ended up happening is, mostly they were, they paid what they paid when they had to pay it, as long as it guaranteed they got the source of fuel. And when I started looking at it and going around in '16 and '17, going and meeting fuel buyers at nuclear industry conferences away from Wall Street, and just trying to learn the business at a deeper level, it's one of the things that stood out to me was the complacency of a fuel buyer. Again, it's not their intellect, right? I can't compete on IQ points against a nuclear engineer. They're very smart people, they just don't have the incentive. They don't get paid a portion of the savings that they make, the average fuel buyer, if he picks off a bottom and it moves materially, it doesn't matter. Conversely, if prices rip at it, and they go higher like they have, they don't get fired, as long as they get the uranium. It is what it is. It's just where the market is. So that's led to this, what I would say, I've never said, I've been investing 30 years in the hedge fund industry, I've never seen a cohort like this. Nothing has come close.

You know, in 2018, I went to the Nuclear Energy Institute, which is the large trade organization in the United States that pretty much represents the interest of nuclear power in Congress. And they do a really fine job, and they're a huge organization, and they do lobbying. And I went to them, and I said in 2018, guys, the forecast that everyone's using, and it's after having spent a couple of years doing a deep dive on supply and demand. I said, you don't know me. I haven't spent all my career in the nuclear industry, the supply demand that everyone's looking at is wrong. It's just not right. And the forecasters are driving looking in the rearview mirror. And they said, yeah, okay, get out of here. Who are you? And I kept knocking on the door, and I found a champion there that took the time to listen and laid out a presentation, and said, look, these aren't my numbers. These aren't our numbers. We're not projecting. We're looking at the industry forecasts that are out there that form consensus, and here's why they can't be correct. We would like to share our view with people, because I would be out at nuclear conferences talking to fuel buyers, and I noticed that complacency, ah, there's plenty of uranium. The recency biases were unbelievable. 2011 Fukushima melts down, nuclear power, basically, nobody wanted it. It was left for dead. There was, backed up uranium was floating around everywhere. And so, for 2012, '13, '14, '15, '16, '17, you know, recency bias crept in, there's always uranium. Price of uranium is in the high teens. It will stay there. Everyone told me, fuel buyer said it's going to 10. I'll bet you. You want a beer? I'll bet you beer. It's going to 10, from 18, from 20. And so as you start understanding their incentives, I couldn't really wrap my head around it like, okay, so the structure is such that you just need to secure pounds.

Anyway, the NEI was kind enough to invite me in 2018 to speak to their annual conference. I talked to enough people there, where I showed them we kind of knew what we were talking about. And I went to Boston at an annual conference in October of 2018, and I stood up there and I I said, you folks have done a fabulous job staying out of the contract market. When your contracts were expiring, the price of uranium was tumbling from as high as it was, 137 in June of '07. But after Fukushima, it was in the 60s then. And now, it kept coming to 50 and 40 and 30, and when their long term contracts were expiring, the traders were doing near, short term carry trades with them. So they didn't recommit at high prices. So they did a great job. They stayed out of the market because there was excess supply post Fukushima and Japan was 13% of world demand, and they shut down all 54 reactors. So it created a bottleneck and an excess supply at the time. But like everything, things change, and when you had years of inventory drawdowns, it was very clear that the forecast for the future was wrong. They were still taking into account excess drawdowns. They were, I thought the demand numbers were too light, supply wasn't being incentivized to come online. New supply was going to be needed, but you needed to bring it back online at a higher price, because a lot of them had shut down anyway. I presented this case. Told them what a wonderful job they did, and I got off the stage, and I was literally verbally accosted by someone from the industry who told me, I I'm a terrible Wall Street person. I'm here preying on good, hardworking people, unlike me, because I'm a Wall Street person, I'm just a money hungry, money grubbing person. And I thought, wow, and why would you want to scare these people? And I said, wow, I'm really not. I thought, I'm trying to help them. And so, I then asked this person, who is an industry journalist, if you had a moment, I'd like to share with you our model and we went over, one of the guys who works for me, Tim Chilleri, we went over to an enclave at the hotel, and sat down and opened up our laptop and spent time and said, this is what this looks like. There's 100 tabs on here. You know, you don't get married to your model, but it's why I'm here. Like, this is it, this is original work. And after a while, that person said, oh, my god, I'm sorry. I didn't realize the amount of work that goes into this, but sitting around the bar talking to people, not a single fuel buyer cared. Now, I would speak to fuel buyers, but I had to go out of my way to get them to even say a word to me. No one followed up with me. No one cared. I'd see them at another conference in 2019, the liaison at the NEI said, we need you to come back, because I understand what you're saying is right. And we went back and I gave, this was in Nashville, Tennessee, in October, and I gave an updated presentation, and said, again, here's why consensus is wrong. And that was there that I was met with such disdain. People were, that fuel buyers were telling me around the bar afterwards, I have no idea what I'm talking about, I should stay out of their business, that prices are going lower. Meanwhile, at this time, prices were already starting to move higher, and since then, by the way, prices are up 4.5 X but today, if those same people who I still see will still tell me prices aren't going higher.

Erik: But hang on a second, Mike, because what I don't understand, if these guys were opposing you as traders, I would get it. I would say they were lousy traders, but I would get it. But these are people whose financial incentive is to make sure they don't get fired for running out of fuel. They can't get fired for anything else. So why wouldn't they just cite you as the guy who gave them, you know, evidence, well because of what this guy said, that's my excuse for buying too much.

Mike: It's a great question, but in your question is the answer, it's the financial incentive that's lacking. They don't capture any upside if they don't get it right now, though, very, very large ones, some of the very big utilities, they get it. They do that, they do the analysis, and they cover themselves. But most of them don't, and because they don't have that financial incentive to get that, to get it right, because they'll just go pay what they need to pay, and it has by far been the hardest thing. And I give an example, and it was 2017 and I was in a nuclear conference, and we hadn't expressed a view yet through a vehicle, and I had just read an inventory report from one of the forecasters out there, and they referenced the amount of inventory out there. It was something like 1.4, 1.7 billion pounds of inventory in the world. And if you, at that time, if you looked at industry consensus, it was probably 170 million pounds a year, which would have indicated somewhere like out 8 to 10 years of inventory, depending on the exact numbers. And typically, they want to keep utilities, to keep one and a half to two years around. But, I bought the report, and I read through it. As I was reading through it, I'm like, oh gosh, this isn't like, most of this inventory is not relevant. It it's not available, it's not economical, it's not there's other purposes for it. That's not the real number. The real number might be, I don't know, three, three and a half years worth of supply. If I'm really wrong, it's four years and they want to, but it's not 8 or 10. And again, at that point in time, I've been looking at it for a while, but not as ingrained as we are now, but all I had to do is take the time to read it. And I'm definitely not the sharpest tool in the shed, but I could read and I'm like, yeah, this doesn't make sense. I had dinner with some of the biggest fuel buyers in the world at that conference, and I was talking to them, and I said, can we talk about the inventory? And they said, what's to talk about? It's, I don't know if you saw my [blank], I won't say the name their inventory report, the decade worth of fuel out there. I said, oh yeah, but dude, pardon me, forgive me. I don't mean to pretend to know what you do or that you're certainly smarter than me. But no, there's not. There's maybe three, four years. No, there's not. They said there's 10, or whatever the number was in that or in that ballpark based on the amount of pounds, I said, but there's not, like, it's just not there. It's not economical. It's not accessible. If you got to the point where you were re enriching it, it would be because prices are already gone nuts. But I'm telling you that that's not the amount of pounds out there. And again, I was met with, I have no idea what I'm talking about, like being pat on the head. And it was during those encounters where time and again and again, whether it was ‘17 or ‘18, presenting them, ‘19 presenting to them. You know, one of the biggest obstacles, Erik, that, or one of the biggest things we have to be aware of as investors, is our own biases, our own willingness to believe our own thesis and not look for why we're wrong, right? So, I wake up every day assuming I'm wrong and try and figure out where I'm not. And so, I always have come into it with that. But what I've learned to do, and you always want to hear opposing views, right? Because I don't have a monopoly on, mostly on anything, certainly not good ideas, or I'm certainly don't assume I'm right, but this cohort, right? And I've not encountered that in a 30-year career, a cohort that does not want to hear a different view. Now, that's not all, I'm not into hating all of them, but most of them, and to the point where, now, and these same people, each year to conferences, I see them, will tell me, I'm wrong, and it's almost laughable. I've been right. It's been 4x, whatever the price at 4.5, I'm still wrong? What do you consider to be right?

Erik: Well, Mike, I'm going to interject a little bit of advice for any nuclear fuel buyers that might be listening to us. I came from the software industry, and I got to tell you, I also kind of had a reaction to the culture of Wall Street, those money grubbing, son of a bitch, stinking Wall Street guys, if that's what you think of Mike, fine, that's your prerogative. But here's a tip for you. When those guys, those stinking, slimy, sleazy, money grubbing Wall Street guys, are running a fund with a few 100 million dollars levered up betting against you, it's usually because they know something. Little tip.

Anyway, let's move on. The big news, everybody thought that Kazatomprom, that's the big producer in Kazakhstan, where it's not the biggest resource in the world, but it's close to it. A lot of people thought, well, look, Kazatomprom could always scale up their production anytime they wanted to. And that was one of the reasons the buyers would say that seemed to be making them so complacent. You know, Kazatomprom can always scale up production. There's nothing to worry about. Then August 23, which by the time our listeners hear this interview will be a couple of weeks ago, they guided down 50 250 metric tons. That's 7.5% of global supply that just came out of the market, at least in terms of that guidance. Now that's not news, frankly, because you and our friend Justin Huhn, over at uraniuminsider.com have been predicting this for years, that Kazatomrpom didn't really have the spare capacity everybody thought. Now that the news is out, it seems like they're still not taking it seriously, at least not as of while we're recording this on the 28th of August, what's going on here?

Mike: You know, it's a great question. I'll just refer you to the slide deck. On the slide, realized production and all in sustaining costs. Again, if you came into this industry and you applied a playbook, right? 40% producer, state owned entity, right? You would think they could sell whatever they want to sell out. It's not a big deal. Having studied this company very closely for many years now, even before it was public, one of the things that stood out to us was, this was, to some extent, a foreign currency play. And what I mean by that is, it's a company that is in Kazakhstan. They cost in Tenge and they sell in dollars. So when the Tenge is weak against the dollar, they get a margin boost, and because they're selling dollars against a weak, far home currency. And you know, if you go back and look, they're the world's lowest cost producer, right? So they were coming public in 2018, 2019, and they put out a big prospectus, and at the time that all in sustaining cost was to produce a pound of uranium in $13, $14, $15 range, versus, if you're looking around at some of the top tier in the West, you're looking in the high 20s, low 30s, and even a little bit more. And so, it was like this great advantage. But if you went back and did the analysis before they put out the big prospectus, they were a private company, but they had public debt, so they did have an annual report. And if you went through that back in 2012, ’13, ‘14, that's around ’13, ’14 when they devalued the currency, and it went from, 70 Tenge to where it sits today, at 480 Tenge to the taller. But if you look, you realize, wow, those guys produce uranium in the mid 30s. They're not really a great, low-cost producer. They've been a great beneficiary of a devalued currency.

And so, in 2017, the world's largest producer came out before they were public, and they cut supply. And the way it works over there is that the state owned entity, Kazatomprom, has an agreement with the state, with the government, that they will produce x number of pounds per

year, and they can go plus or minus 20%. Those are called subsoil use agreements, and they're codified through a competent person report. How big is the resource? How many mines did they have? How much would they produce? And what they came out in 2017, and they said, we're going to cut 20% below our subsoil use agreement, because the market is out of balance, and we don't like the low uranium prices. So that was 2017. So here you had the state owned producer, lowest cost, and they said, we're going to focus on a value over volume strategy and the way that everyone applauded it say, well, that's great. Then 2017 came in, and then they came public, 2018, '19, and their costs were $12 a pound, all in sustaining costs. And then 2019, they produced about 59 million pounds of uranium. And then 2020 came along, and COVID came, and they kept minus 20% below subsoil use and then in '21, minus 20 were percent of subsoil use value over volume. They couldn't produce, COVID, off course, was a challenge. And then '22 came along. And then they think they kept it. But in '22, in September of '22, their guided for the 2024 production was going to be minus 10%, so they were going to increase production. But by the time '23 came along, during 2023, they took that minus 10 for 2024 production guidance, and they took it to minus 23, to minus 27. Now, if you were familiar with subsoil use, you would know that if you go below minus 20, you need to go back to the government and rework them, and that's a pain in the neck. You don't want to be that person. You don't want to be that management team. And by the way, this is the fourth management team, CEO, CFO in the last five years. But what happened during that time period is this, world's low cost producer, which was producing uranium by 2019 at $11.94 a pound, all in sustaining cost. If we fast forward to today for 2024, their guidance is 59.8ish, 60 million pounds. So the same as it was in 2019, 59 million pounds. From a scale standpoint, the difference is, it's going to cost them $28 a pound, not $12 that it did then. And if you looked at their prospectus when it came out back then, it's 700 and some page prospectus they had forecasted all in sustaining cost of around $12 by 2024. Instead, it's going to be $28. And if I took the currency, the 340 Tenge to the dollar, that was being used for the forecasted years forward, not the 480 today, so the currency has devalued another 40%. The constant currency cost is $37.96 or $38 a pound. So what's happened? Well, they've not predicted, by the way, for 2025, they just gave guidance of a reduction of 17% versus the sub soil use agreements. So basically, you have the world's largest uranium producer that is producing the same amount of uranium, same amount of uranium in 2024 as they did in 2019, their costs have gone from $12 a pound to $28 a pound. If we use the same constant currency they got into back in 2018, it's really $38 a pound. And then they're looking to next year, you'll have a little bit higher guidance, but that which is down 17% versus what their subsoil use agreement is.

So you asked what happened on August 1, Kazatomprom came out, and they said, we are not going to be down 23 to 27 we're going to be down 20%, which is. in mind, with their legal limits that they're allowed to be, which was an increase of 6% in guidance, but still 20% below where they should have been. And the headlines in the newspaper was the world's largest uranium producer ramps production 6% and I have never seen a bigger ready, fire, aim reaction to a market. They took the equities down 7%, 8% that day because Big Bad Kazatomprom, whose costs have gone up 2.5 X, who is struggling to produce uranium at the clip, anywhere near the clip they want and use the value over volume, which will take but if you go back Erik, and I'll wrap it up on this, in 2005 they were producing 9 million pounds of uranium. They were

forecasted to produce 22 million by 2015. Well, by the time it got to 2015, they were producing 56 million pounds. And so, they came on like gangbusters, and they flooded the market with uranium. But that was their best shot, and since then, it's been a series of under producing and cost spiraling out of control.

So fast forward to August 1, 2024, they produce that, the stock sell off. Well, here just on August 23 they came out and said, for 2025 we're going to be 17% lower than our subsoil use agreements. That's significant. You're talking close to double digit of world supply than what they were forecasting. And so Kazatomprom is, obviously, they're a large producer, but it's a state owned entity in Kazakhstan who has, they produce on their own, and they also have joint ventures with Western producers, with Cameco, with Arano, the state French owned utility, with some of the Chinese, with some of the Japanese. But if you were Cameco, what was really appealing to you was to be a participant in Kazatomprom in Kazakhstan in the mid-teens, and because you can produce pounds at a low cost and much lower than you can produce in northern Saskatchewan, which is the highest grade reserves in the world, but you had lower costs in Kazakhstan. Now, if you're Cameco today, you've got the same costs as you do in northern Saskatchewan. So, for them, Cameco, I think they're incredibly well positioned. But Kazatomprom is not the Field of Dreams that people think it is. And so when new people come into this trade, what I have seen, my phone now, because of the data center play and because a number of the investment banks have picked up coverage, it's not uncommon for me to get calls from multi-billion dollar hedge funds who want to come into the trade, who have been looking at it for two weeks and tell me how it's going to work. And I'm like, okay, let me hear your view of the world. And they just assume that 800 pound gorilla, Kazatomprom, is going to control the market. Kazatomrpom, you know, are the wheels falling off the bus? I don't know, but the bus is in trouble. So that's our view as to why, to your question, why doesn't it move again? The stocks went, on 23rd, because the stocks moved up 7%, 8%, 9%, but the spot price didn't move. And it's similar to what I've been telling some of these big funds. I get phone calls, hey, AI, and data center, nuclear is a beneficiary of that. I really like the trade for uranium. Okay, great. I could see that in the future, but a fuel buyer could not care less about buying uranium today, because you think that data centers are going to be used. They will, ultimately, it all accrues to the uranium producer, but not in the spot market on a given day. So, for instance, that the equities responded as they should have, because it just creates more of a deficit. There are huge structural deficits in this market, in the contract market, where annual consumption is greater than annual economic supply significantly more so, by the way 2030, 25% of the supply that is needed to meet the demand in 2030 is not a mine. It's not permitted. They're not built, they're not financed, nothing. So it's enormous structural deficits. But on a day to day basis, the spot market will not react to it, and that's what you just need to figure out, how you can recognize and rationalize that spot market isn't the market that needs to be focused on. So, long winded way of saying, the Kazakhs, yes, they're a big producer, but they've got significant challenges. And by the way, it's a bifurcating market. More and more and more are those pounds headed east to Russia and China. So 65%, 70% I should say, of uranium is produced in the East, 70% is consumed in the West, there is so much geopolitical risk in this trade. It is unbelievable, and it gets ignored mostly by fuel buyers.

Erik: Mike, I want to focus on what you just said about East and West, because I think it's really important. We've already got US foreign policy. You know, we've had this Russian import ban without a lot of thought, frankly, as far as I'm concerned, on US lawmakers part about whether that jeopardizes supply that we really need access to. You just said Kazatomprom is basically providing mostly exported supply to the West. What would happen if a further escalation in this Russia-Ukraine conflict cut that supply off so that the West no longer had access to any supply from Kazatomprom at any price, because it's sanctioned either by the United States or by Russia, they won't let it be exported. What would that do to the market?

Mike: Great question. And you know, the influence of Russia is more and more apparent in Kazakhstan, in Kazatomprom, they are a force to be reckoned with within Kazatomprom, and the Chinese are there too. But it's a great question, and it's one that I think the fuel buyers have been unbelievably complacent on. And if something were to happen, if the US banned Russian uranium, but should the Kremlin decide not to send fuel in, you don't forget, at any point in time, between Kazakhstan and Uzbekistan and Russia could add up to as much as 50% of the imports to run the nuclear power plants in the United States, which is 20% of the electricity, but to think about in conversations with fuel buyers and understanding how they think the complacency is staggering to me. It's unbelievable how they, whether for the reasons you mentioned, or for whatever else, they just are somewhat complacent, more than somewhat complacent about it. I personally think it's crazy.

Erik: Well, let's focus on that then, because unlike most trades, it sounds to me like this is not really about supply and demand. This is about buyer complacency, and at some point, there must be some forcing function, some event that wakes them up. What is that event, and what happens when they wake up and recognize, oh, wow, there really is a risk that we might not be able to buy the fuel we need at any price if the West cuts itself off from Russian and Kazakh supply?

Mike: From a supply demand standpoint, that horse left the barn. They just haven't been smacked up beside the head yet by it, they will. They absolutely, in our view, will, because it comes down to this. I mentioned earlier. It's a contracting market, the vast majority of pounds. During lean years when there's excess supply in the market, the utilities contracted about 35% of their annual demand. They did that from ‘92 to ‘04, they drew down inventories, and then they contracted from ‘05 to 2012 at almost 115% of annual demand, and they paid through the roof. Prices went from $7 in ‘00, and then they went to as high as $137 per pound in ‘07. And then when Fukushima came around, the prices were in the 60s. But since Fukushima melted down and you had excess supply, lo and behold, they re-contracted about 36%, 37% annual clip. And what's happened? Inventories have been sucked down. How do we know? Because term pricing is fun, and spot is, they're both up for 4.5 x and so you're starting to see contracting occur again. And so, when economic demand, when they start to contract to their annual consumption, and last year, you were close this year for the reasons I mentioned before, it's pulled back a little bit, but that's where the rubber meets the road. That's where the economic capacity, that's why pricing is up 21% this year. That's normal supply and demand, they're hosed on that scenario, right? You can hold it off a little bit. You can borrow some pounds here.

You can do what you need for the next couple of years. But we're not talking in mining in the next couple of years. There has been a massive underinvestment for a decade, and so now, like I said, one of the biggest numbers that jumps off the pages, 25%, as much as 20%, almost 25% of the pounds needed in six years from now, which is tomorrow, with dog years in mining. It's not even permitted yet. It doesn't exist. It's not a mine. Now, layer on to that other risk, the geopolitical risk, Erik, and that's where if things get a little out of hand, they get out of hand. And you know what? So be it, they were warned, they had every opportunity to cover themselves. And you know that's, hey, welcome to capital. Welcome to the capital markets. You know, they'll figure it out.

Erik: Now, you said that the market generally is 85% long-term contracting. And what that says to me is, unlike something like crude oil, where you've got a balanced supply and demand right here, right now, because there's a physical problem with not having enough tanks to store it in, we don't have that problem with uranium. So, I would think, given that this is a long-term contracting market, it should be forward looking. So therefore, when you get something like, I mean, China doesn't even announce new reactors individually anymore, they seem to be bulk announcing a dozen at a time. Okay, you've got the triple nuclear initiative where, 25 nations have signed on to building 746 gigawatts of additional capacity over the next 25 years. These are things that you would expect. Each one of these announcements would be a shock that sends, you know, just tremors through the contracting market. There's zero. How can that be?

Mike: Again, it's in the contracting market, though it's up 21% this year pricing, so they're starting to recognize it on very low volumes, right? But again…

Erik: But these news events, the news event of the triple nuclear, nothing, zero.

Mike: They don’t react to news events because it's long live. And so, what they will do is they will go out and they… it's another bizarre function of this market, is they get together at annual conferences. You'll be there, I'll be there in London next week, and they get together, the producers and the fuel buyers. And the fuel buyers will say, well, you know, we're okay. But then these contracts are mostly bilaterally negotiated. They're not RFPs, requests for proposals, go into the market. That's just for the fuel buyers to kind of sniff out where the pricing is, but then when they really want to get down to brass tacks, most contracts are signed under, hey, let's sit down and hash out what we really need. I feel pretty good for more due diligence, that you're going to start to see that accelerate more, which we think ultimately will lead to higher pricing. Where prices go bananas quickly, it’s shocks to the system. And it's very perilous. I mean, their supply is, it's on a razor's edge, and whether, you know, that's a news event, if a mine has a fire or a flood or something that tends to jolt it right away. But now it's just been a steady progression of rising term contract prices, like I said. Now, remember, too, really important to somebody learning the market, they'll look at the long term contract and say, $80, up 21% that year, that's great. It was down as low as in the 20s, not handful of years ago. But that's not, that's not the price. And this is another bizarre characteristic of this market. The price is quoted as a base escalated price. So it's quoted as though, in a bear market, when the buyers are in control, they tell a utility, tell a producer, we will pay X dollars, plus we'll escalate it

3% a year taking delivery three years from now, and you can escalate it in the next three years, but that's the price in a bull market where the suppliers are in control. And what's happening now is the utilities, or the producers, are telling the utilities, listen, we're not going to give you a fixed price. We want market exposure. We want market related pricing. And so, what they'll do is they will say, and the utility will say, okay, and this is how you know they know they have a problem, because they're doing market related contracts. That's most of the contracting. So right now, the ceilings are in the $120 range. Again, the price is being quoted in $80 and the floor is $75 so if I'm a producer, I can sell a market related contract, and I got $5 downside and $40 upside. That's really asymmetrical, right? So, the fact that those are the parameters that are being seen and contracted for in the market, yet the price reporters still report yesterday's news, just like they forecast yesterday's news. They're pricing a contract that is by far the one less being conducted in the marketplace. So, it's really important to understand those nuances and those distinctions that are taking place right now.

Erik: Okay, so it sounds like you and I are in strong agreement that this is an incredibly bullish setup, that what's going on here is, there's going to be a massive deficit of supply relative to the expected demand, which we know is going to increase tremendously with all of these new Chinese reactors with a triple nuclear initiative, and frankly, just to meet existing demand, we would still be remiss not to talk about what the potential bearish factors could be. So it seems to me, I mean, obviously the Fukushima disaster really did a number on this market for a number of years. What if somebody were to take out either the Kursk or the Zaporizhzhia nuclear plant, somebody bombs it, and it results in a great big environmental disaster with a lot of radioactive contamination. Now, that's not a failure of nuclear energy, but I guess it does expose a vulnerability, that these plants could be targets in a war action. Do you think that has a Fukushima sized effect on the market? I mean, what would it do?

Mike: I do think, and that's one of the risks. When people ask me what are the key risks? Like you're asking, that's one that you just hope cooler heads prevail. Because I do think if there was a major event, yeah, I think that people would get scared. I think they would say, yeah, well, I get it. It's really clean, it's all that, but geez. Now, I would also point out, these things are designed that the updated ones, with the containment domes to handle a 747 hitting them, but some of the older ones, like you're in that region where you are right now, not so much. So, yeah, I do think it would certainly have an impact on sentiment, without a doubt. You know, I think you asked, what are other risks? I think, certainly, I think the Kazakhs have had this value over volume strategy, as I talked about, where they're producing less and making more. I think a lot of that's forced upon them, because I think they have production problems. You know when CapEx per pound goes from $3 to $10, you have problems. When you're all in sustaining costs go from go from $12 to $28, you have problems. So, I don't believe that it's this altruistic. We're just really wanting to be, you know, really value over volume folks. I think a lot of it's forced on them. But down the road, should they be able to get their spiraling out of control, costs under control, should the Russians have more of an impact over there, and then, with a heavy hand, which I think, is something you always have to think of, you know, whatever might have, can they lose their value over volume? Sure, it's always something that you have to be aware of, from a risk standpoint.

One of the things we're always looking at, that we're looking for, is the Chinese have a significant amount of inventory. Now they're a big driver of the nuclear cycle, and they built up inventories that are significantly greater than you have in the West. But that makes sense with how they think about things. They think about things from a 50 to 100-year standpoint, whereas the US and Western European fuel buyers are looking to have two to three years of inventory, right? So, it's a different mindset. China is not blessed with indigenous copious amounts of indigenous uranium. So, they've got to go to tough places of the world to try and get it in parts of Africa that's really challenging for them, and they keep building their war chest of uranium inventories, but it's certainly something that we're always looking for. Is there some sort of, could there be a change to that attitude? Can they decide that? You know, one of the things that Chinese do sometimes in other commodities is, before they want to go into a major contracting cycle, it's not uncommon for them to dump some pounds into a market so that they could drive pricing down a little bit. So that's something we're always on the lookout for, right? Because we can't be complacent and say, oh, that can't happen. You just have to be aware of things like that.

On the policy front, that's been something that has surprised us to the upside. There's been far more support than I ever thought we would see just five years ago. I never thought we'd see the policy support we're getting now. But, I do think there are things that you have to be aware of. One of the things I disagree with, and I think people who point to that, I don't think there are excess inventories floating around. I think in a thin spot market, you can drive the price down a little bit by dumping a few pounds in the market. But I've seen people say, oh, there's a billion pounds, no there's not. In number there may be in total, but that's not in the commercial fuel cycle. That's not out there. It's just not the case. But yeah, look, should Zaporizhzhia or Kursk go down, I think you have people get scared by that, and you see it day to day in the market. It's reflected in the equity prices.

Erik: Well, Mike, I could keep asking you questions for two more hours, and look forward to doing that when I see you in London, the same day that our listeners will be listening to this interview. But before I let you go, please tell our listeners how they can contact you at Sachem Cove Capital.

Mike: Erik, they can always just go to our website, sachemcove.com. My business partner, Tim Rotolo, handles all the inbound inquiries. So yeah, that's how they could find us.

Erik: Fantastic. And from a compliance standpoint, Mike cannot tell you to contact Tim Rotolo if you are an institutional or accredited investor looking for a Tear Sheet on the fund. But since I'm retired from the hedge fund business, I'm allowed to say that Patrick Ceresna and Nick Galarnyk will be back as MacroVoices continues right here at macrovoices.com. I'll be sitting out today's post game because I'm in London having a beer with Mike.