SM263 + 264 | 12.27.2025 + 1.3.2026
Holiday Special 2025

We present our two-part Holiday Special 2025: The Year in Review.

2025 has been a big year full of big months here at Abaxx and at SmarterMarkets™, and we're closing out 2025 by revisiting the conversations with our guests that helped us understand and articulate the themes that would come to define the year.

2025 was the year in which we discovered that this was not the energy transition that we were expecting; and the year in which a new geopolitical reality emerged and old geopolitical concerns resurfaced. It was the year featuring a tale of two carbon markets and the need for new weather markets to manage the risks posed by reliance on renewable power. And 2025 was the year in which there was both a new gold rush and a rush into tokenization.

Our guests in order of appearance:

Part One

- Andy Home – Senior Metals Columnist, Thomson Reuters
  SM213 – 1.18.2025 – The State of Play in Battery Metals
- Andrea Hotter – Special Correspondent, Fastmarkets
  SM214 – 1.25.2025 – The State of Play in Battery Metals
- Peter Zaman – Partner, HFW Singapore
  SM218 – 2.22.2025 – Carbon Frontiers 2025
- Nobuo Tanaka – Executive Director Emeritus, International Energy Agency (IEA)
  SM246 – 8.30.2025 – Summer Playlist 2025
- Helima Croft – Managing Director & Global Head of Commodity Strategy, RBC Capital Markets
  SM245 – 8.23.2025 – Summer Playlist 2025
- Dave Ernsberger & Mark Eramo – Co-Presidents, S&P Global Commodity Insights
  SM251 – 10.4.2025 – Catching Up On Climate
- Rene Velasquez – Managing Partner, Valitera
  SM219 – 3.1.2025 – Carbon Frontiers 2025
- Mark Lewis – Partner & Managing Director, Climate Finance Partners LLC and Former Head of Research, Andurand Capital
  SM216 – 2.8.2025 – Carbon Frontiers 2025
- Hannah Hauman – Global Head of Carbon Trading, Trafigura
  SM250 – 9.27.2025 – Catching Up On Climate
- Theresa Kammel & Pierre Buisson – Originator & Senior Structurer, Weather & Agro Zurich, Munich Re
  SM241 – 7.26.2025 – Summer Playlist 2025

Part Two

- Josh Crumb – Founder & CEO, Abaxx Technologies
  SM229 – 5.3.2025 – Gold for the 21st Century
- Steve Lowe – Strategic Advisor for Precious Metals, Abaxx and Former Managing Director, Co-Head of Global Base and Precious Metals, Scotiabank
  SM231 – 5.17.2025 – Gold for the 21st Century
- Sunil Kashyap – Managing Director at FinMet Pte Ltd., Singapore
  SM224 – 3.29.2025 – Gold for the 21st Century
- Wade Brennan – CEO & Co-Founder, Kilo Capital
  SM225 – 4.5.2025 – Gold for the 21st Century
- Thom McMahon – Co-Founder, Abaxx Technologies
  SM235 – 6.14.2025 – Gold for the 21st Century
- Albert Cheng – CEO, Singapore Bullion Market Association (SBMA)
  SM240 – 7.19.2025 – Summer Playlist 2025
- Ian Forester – Head of Product, Abaxx Technologies

SM254 – 10.25.2025 – Re-engineering Tokenization
- Riley Hughes – Co-Founder & CEO, Trinsic
  SM258 – 11.22.2025 – Re-engineering Tokenization
- Carrie Jaquith – Global Head of Digital Product, Abaxx Technologies
  SM257 – 11.15.2025 – Re-engineering Tokenization
- Leah Wald – Digital Title Lead, Abaxx Technologies
  SM261 – 12.13.2025 – Re-engineering Tokenization
- Walt Lukken – President & CEO, FIA
  SM262 – 12.20.2025 – Re-engineering Tokenization
- Josh Crumb – Founder & CEO, Abaxx Technologies
  SM253 – 10.18.2025 – Re-engineering Tokenization

Part One

Dave Ernsberger (00s):
Genuinely speaking, it's important to go deep on a multipolar scenario where actually there are very different mechanisms in play and different models that are actually very well progressed by now that are gonna have different outcomes. Because just like when the modern energy industry was being founded in the 1890s, tomorrow's energy industry is being founded in the 2020s and nobody knows what the ultimate outcome is going to look like in the big picture, but it's going to be probably one of the iterations being formulated right now In one of the countries we've been talking about,

Announcer (34s):
Welcome to SmarterMarkets, a weekly podcast featuring the icons and entrepreneurs of technology, commodities, and finance ranting on the inadequacies of our systems and riffing on ideas for how to solve them. Together we examine the questions: are we facing a crisis of information or a crisis of trust, and will building Smarter Markets be the antidote?
This episode is brought to you in part by Abaxx Exchange, bringing better price discovery and risk management tools to navigate today's commodities markets through centrally cleared, physically deliverable futures contracts in energy, environmental, battery materials, and precious metals markets. Smarter Markets are here.

David Greely (01m 23s):
Welcome to our SmarterMarkets Holiday Special 2025, the year in review. I am Dave Greely, Chief Economist at Abaxx Technologies. 2025 has been a big year full of big months here at Abaxx and at SmarterMarkets and we are closing out 2025 by revisiting the conversations with our guests that helped us understand and articulate the themes that would come to define the year. 2025 was the year in which we discovered that this was not the energy transition that we were expecting. The year in which a new geopolitical reality emerged and old geopolitical concerns resurfaced. It was the year featuring a tale of two carbon markets and the need for new weather markets to manage the risks posed by reliance on renewable power. And finally, 2025 was the year in which there was both a new gold rush and a rush into tokenization. We hope you will sit back, relax and enjoy our 2025 year-end review.

David Greely (02m 22s):
Andy Home, Senior Metals Columnist, Thomson Reuters.
I was thinking you are just the person to help me get my head on straight thinking about the year to come and where we are in the battery metal space and where we might be going. And I remember the last time you were here with us on the podcast, you said something that stuck with me. You said that the energy transition hasn't stopped, but it just hasn't gone the way people thought it would go. And in this podcast series where we are discussing the state of play in the battery metals markets, I thought that would be the perfect place for us to pick up the conversation.

Andy Home (02m 58s):
Let's take a little step back. I mean let's look at what's been going on in these markets for the last four or five years. So 2021, 2022, it was a rip roaring bull market. Do you remember Cobalt nickel, Lillian? They were all going absolute gangbusters. Everyone was super excited about the EV revolution and you know, the exponential demand growth forecast that we were all looking at, okay, each one of them crashed in 2022. 2023, nickel started it. Cobalt followed, lithium was last, right? We are back to sort of like where we were, but

here is what happened in 2024, nothing. They just kept on grinding steadily lower and you are getting you to absolute producer pain levels, right? So we have got an industry that just, what, three or four years ago it was kind of like me trying to expand capacity, like there was no tomorrow we were told that the world was gonna run out of this stuff. This last year you had just seen a string of casualties, right? Plants have been closed, new mines have been mothball every once in all. I can mean pushed back. I mean any sort of investment plans. So this is a very, very difficult market for anyone trying to sort, right? Get into the battery metals. It's a difficult market for those already in the battery metals business, right and at the moment we are just still waiting as we were all last year. Any signs of recovery?

David Greely (04m 24s):
And when you look at it, part of what's made it so brutal that might be a little bit of a western perspective in a way, right? Because so much of the production that's been coming on has been coming out of China, so much of the demand for electric vehicles and batteries has been coming out of China. How has China's growth and dominance really affected the whole balance of the industry?

Andy Home (04m 48s):
One of the answers of me behind why the price crashes, of course overproduction, right? The world has simply produced too much of these metals at the time when demand maybe wasn't quite what we expected to be and let's run through them. Who dominates sort of cobalt production in the world? Chinese producers operating out of the Democratic Republic of Congo, right? Who dominates lithium production and lithium processing. We know the answer to that. We could say in nickel, maybe slightly different because it all comes from Indonesia, but who operates the Indonesian mines and plants is the Chinese, right? These guys are sort of like a, are basically carried on expanding even as everyone else has had a problem, right? But hey, the whole point here is the west is running 10 to 15 years behind the Chinese. We in the West have been playing catch up ever since. And we still are by the way.

David Greely (05m 38s):
Turning to the other side of the supply chain. You had brought up that for a long time, US producers, the trouble with opening a new mine was often permitting and getting the approvals. Now you bring up, it's not only the permitting, it's the price. What does that mean for Western producers? Where did we go from here? I know you wrote in a recent article that much of the production in the US has been focused more on scrap than say new mines. What's the role for kind of new mine production outside of China and these areas where China is very embedded?

Andy Home (06m 15s):
Well, I mean I think the answer's pretty straightforward. Either we all buy really nice cheap, very good Chinese electric vehicles and watch our domestic automotive industries die probably quite suddenly. Or we have to do it ourselves right? In western markets and you can't do it without new mines and that that's just a reality. I mean there's lots of really interesting developments going on the battery recycling side, but you know, bear in mind you need a good pool of electric vehicles to have enough batteries to recycle in the first place. So mines, if you do not want to rely on China, you are going to have to build them building them in the states, tricky. We know the problems with the mining laws there and how long it can take to get any mine up and running mines in friendly countries such as Canada.

Andy Home (07m 04s):
I don't know whether you still count Canada as a friendly country under the new administration or you know some of the south Arabian countries. Yes, I mean if you do not want to buy another Chinese to dominate the electric vehicle market, new mines and new supply chains must be built out. It's difficult though, isn't it, if prices are bombed out at so multi-year low prices, who wants to lend finance to that sort of proposition? I think the US has quite correctly. You have seen a lot of federal investment directly and through loan organizations and to some extent you could say well that's also taking a leaf outta the Chinese book, isn't it

David Greely (07m 41s):
Andrea Hotter, Special Correspondent, Fast Markets.

Andrea Hotter (07m 46s):
It's interesting in terms of China, the Biden administration had already banned Chinese hardware and software from being used in the US and cars and he also had imposed a hundred percent tariffs on Chinese electric vehicles and denied that seven and half thousand dollars consumer EV credit that had been really important in the US to any vehicle that had made in China components. So they had kind of already closed the car door, excuse the pun, on Chinese technology as well as vehicles. So Chinese vehicles really EVs weren't

really being sold in the US as it was. And I think Biden's actions mean new ones now. Can't be, we haven't seen any talk or reversing that and I don't think we will, although there might be some exceptions. I think we have to wait and see whether US EV sales slow as a result in the US of all of this.

Andrea Hotter (08m 38s):
One thing I keep hearing from people perhaps less worried about their popularity is that the US needs competition from China in order to improve its own EV offerings and they think that the US should take some pointers from China and up its game a little bit and that it really needs consumers to buy the car they want even if it's Chinese. So I think it's an interesting time. Obviously US buyers and consumers are not going to be able to access Chinese cars. Who knows if there'll be some exemptions but I don't think we're gonna see them in the, in the states but it doesn't necessarily move the US auto industry. Further in deeper into the electric vehicle sector.

David Greely (09m 21s):
Obviously electric vehicles and battery metals are key to an energy transition to a lower carbon economy powered by low carbon renewables. The President has a lot of support for traditional energy sources such as oil and gas and I am curious, you know, for the people you cover on your beat, what's kind of the mood? Is there the positive of the president seems to be backing more production of everything or are they worried that there is going to be a strong shift back towards traditional energy sources like oil and gas?

Andrea Hotter (09m 55s):
Well as he kept saying, we heard a lot during the election campaign before taking office drill, baby drill. So we knew the focus was going to be very much on oil and gas and I think the initial work there will be focused on encouraging oil and gas exploration and production on federal lands and waters. It's interesting, there was a lot of mention of Alaska obviously that's a really key area for natural gas and oil, but also a state with a considerable amount of minerals including nickel and copper which haven't been developed. It's home to the red dog mine, which is a very large zinc mine. That tech resources a Canadian company operates. I did talk this week actually to some Alaskan companies with projects in Alaska who have been waiting to get those projects off the ground and they are really, really positive. They do however point to logistical issues and environmental opposition and indigenous community factors to consider and they do agree those things don't go away but the Governor of Alaska is actually a very strong ally of the President and he is really keen to grow states whilst from natural resources and quickly. So I think you're going to start to see a similar approach adopted around the country, not in Alaska. Definitely the people I am speaking to who are in terms of the mining side and who have projects, at least they are optimistic that those projects are going to get a priority, especially if the US enters into a more kind of confrontational stance against some of its allies on the tariff front.

David Greely (11m 46s):
There's a lot that we need to learn and we are going to be figuring out as we go and the information comes in. But I was curious, are there certain events or actions that you are kind of gaming out and looking to as important signals or signposts that will guide you and guide us on where the path might be going from here?

Andrea Hotter (12m 07s):
I am thinking about it probably as I did during the first Trump administration, that anything can happen and probably also to expect the unexpected. I do think the Ukraine war will be important because it could spell the end to sanctions in the US although I am not really sure that helps the US with oil dominance. If Russia resumes exports, we might see some tariffs there. But I do think that that will be very, very interesting. I think we also need to watch battery chemistries. I think all of these changes maybe we will see more interest in sodium ion technology or solid state batteries to reduce reliance on imports of lithium iron phosphate cells for energy storage. Who knows? I think again, will we see some of the mines that face permitting issues in the US suddenly get the green light? There are quite a lot of them that are in litigation or have been waiting for years and years and years.

Andrea Hotter (13m 03s):
So maybe that happens. I think we still need to remember that those environmental and community issues remain and lawsuits are probably the biggest obstacle there is to this immediate overnight change. I think what all of this does to financing for ESG is going to be really interesting. We are seeing lots of banks and investors pulling back in this area and so we all know that money, it all comes down to money in the end and financing can be a real obstacle. So I think that's really, really important. And I think maybe the biggest concern in the US is whether tariffs create inflationary pressures and then worldwide how trade wars impact global growth.

David Greely (13m 49s):
Peter Zaman, Partner HFW in Singapore

Peter Zaman (13m 54s):
I think the difficulty in this time trying to work out whether or not withdrawal of the US from the Paris agreement is more material than their first withdrawal is a bit more difficult. I think the first time they withdrew people thought Trump coming to power was a one-off, never going to be repeated. It's we just have to get through four years and we will have a Democrat administration and then it will come back into the Paris agreement and things will be like they were before. I don't know that you can take that view this time around. I mean certainly we know that Trump is already withdrawing the US from the Paris agreement, but I don't necessarily assume that at the end of his four year period we won't get another Republican administration who is just gonna keep it that way. So the chances of us saying that this is a one-off anomaly I think, think are rarer now.

Peter Zaman (14m 53s):
Now if you go back to the Kyoto protocol, the US didn't ratify the Kyoto protocol, US did not participate in the Kyoto protocol. It had observer status throughout and it never engaged. So the heavy lifting for any advancement of international carbon markets and therefore introducing carbon trading to the world fell upon the EU, Japan and the rest of the world to basically carry forward the opportunities that the Kyoto protocol presented and I see ourselves pretty much in the same position this time around and I think going forward the reality is if the Paris agreement is going to do its job, it will have to do so without being able to count on the us. It seems to me that if you think about this rationally, if you think about it dispassionately and you think about it logically, we do not have the time and we do not have the will and we do not have the money to achieve 1.5 degrees, not without there being a massive shift in global support for achieving 1.5 degrees, which has to come from the private sector.

Peter Zaman (16m 01s):
And we have not seen the private sector engage as it should. And when it has engaged we have seen ideological debates around what is an appropriate ton and how much environmental integrity should be attached to a ton versus not to have done the ton in the voluntary space being used to whip anybody who is trying to bring the private sector in. And we can turn to the role of the voluntary markets maybe a bit later on. But going back to your real question which is what does the EU do? I am afraid the EU has no choice. If the EU wants to continue with the Paris agreement and if it wants to support and reinforce global efforts, it's going to have to step up and take the lead like it did in the Kyoto protocol, but it cannot do it from a position of unrealistic unaffordable ideological positions, which it then forces down other people's throats, which has generally speaking been its position up till now.

David Greely (17m 07s):
So I guess I am curious as we haven't been able to get carbon markets and carbon policy to move quickly enough and if we are moving into a world where climate action is gonna be slower and take longer to make meaningful change, does our path forward require a broader focus on managing climate risk and a broader build out of environmental markets that can help price adaptation, can help price weather related damages? How do you think we need to be preparing for a world of increased climate risk?

Peter Zaman (17m 44s):
We haven't focused on what we need to do and because we haven't focused on what we need to do, we haven't applied ourselves to the fullest extent possible to determine solutions for financing adaptation as an example. Now in the mitigation space, like you say, we know how to price carbon today, but we don't have a universal price for carbon and we have fragmented markets, we have illiquid markets. The price of carbon is sometimes considered a dirty word because it means that you are now asking your citizens to recognize the cost of the impact of their environmental footprint and these are educational matters, these are matters of policy, these are matters of politics because in an elected world, when you say to people that they are going to have to pay for the cost of their carbon footprint, they would rather not. I think the bigger interesting debate now is how does the Paris Agreement evolve itself to be useful for achieving whatever it is we can achieve, whether that's two degrees or maybe 1.5 degrees and how is it we reinvent in a very positive collaborative way this platform to achieve what we need to achieve even in the adaptation space better than it has been.

Peter Zaman (19m 11s):
It's the only tool we have. We abandoned the Kyoto protocol in 2009. So the reality is we have got to live with the Paris Agreement but we have got to reinvest in the Paris Agreement a way and treat it differently in a more user-friendly way to enable it to be the tool to achieve both the adaptation growth side as well as the mitigation growth side and we need to do both. We can no longer pretend that adaptation is less important than mitigation. The signs are there, we can't ignore it, we need to do more, but we can't just do it on the

basis of public funding. We have got to use leverages of the private sector to enable this to happen. And asking the voluntary sector to do it I don't think is gonna get us there. I think we are going to have to legislate it. And whether that's coming down from Paris agreement or whether that's coming down at the country level or to the level of the EU as a block, I think it's going to have to be done and if we don't do it and we don't do it rapidly, we are looking at a pretty dismal picture in the future.

David Greely (20m 23s):
Nobuo Tanaka, Executive Director Emeritus at the International Energy Agency.
You have had a very long and distinguished career in energy including serving as the Executive Director of the International Energy Agency. And I wanted to start off by asking you, it's been roughly 15 years since you were the executive director of the IEA and I was curious how you have seen the energy landscape and energy policy concerns and conversation change over that period since you led the IEA

Nobuo Tanaka (21m 01s):
The energy issues when IEA was created after the first oil shock, it's about the petroleum, petroleum supply stability is the heart of the energy security. So building the strategic stockpile for the member government and sharing it in case of emergency, that was, that was a mission of the IEA, but because of the shock we experienced by the supply disruption, the countries get prepared by reducing the oil consumption by conservation or energy efficiency and also moving away from oil to more using the natural gas coal and at the same time you create power and the currently the one of the way to switch away from oil is using more and more the renewable energy sources, the modern renewables. So the energy has sadly contributed the global warming by emission of carbon dioxide. So that factor changed the energy policy dramatically and the current recommendations or scenarios the IEA created went very, very much to the greener side of the energy perspective. So yeah, in fact because of the security issue is getting more serious after the geopolitical changes in the world. So the security issue is still very much of the concern of many of world countries. But together with climate change mitigation, the challenge for the energy sector in IEA is getting very much complex

David Greely (22m 53s):
Today people often refer to energy policy and frame it in terms of the energy trilemma. So one more than a dilemma, I guess describing that challenge that you mentioned of balancing those very important priorities of having energy be secure, affordable, and environmentally sustainable and that mix really varies based on each part of the world. How would you characterize the state of the energy tri in both Japan and in Korea, which are of course large energy importers or how are these three competing priorities of security, affordability and sustainability being weighed and balanced and prioritized in Japan and Korea today?

Nobuo Tanaka (23m 39s):
This is a very important question, David, and Japan and Korea are energy situation. We don't have it natural resources at all. And at the same time, renewable energy sources very limited because of weather, because of the geographic situation. We suffer a lot of the challenges of energy security as well as climate change mitigation because it's very much of the challenge and how to reduce the cost for, for security, sustainability and affordability. Another similarity between Korea and Japan is we are both the nuclear user, very peaceful nuclear user. So without nuclear power, energy security cannot be achieved. So Korea has developed many light water reactor, Japan did the, but after Kushima, certainly Korea is much more ahead of us to of using nuclear power. So in a way sustainability, yes, nuclear is the way to reduce the carbon emission, limited use of renewables and also the Japan Korea using the liquified natural gas together.

Nobuo Tanaka (24m 57s):
Being natural gas is much cleaner than coal or oil as a fossil fuel. So, and supply is much more diversified because oil is very much concentrated to the Middle East or Russia. So natural gas is very much Australia, it can be Indonesia, it is in much now in the united typically. So it's very well diversified. So for the say called security and sustainability, natural gas was a very important element for the Japanese diversity and sustainability. So Korea, Japan, and also Taiwan comes after as a major user of the reified natural gas and we successfully commoditize it. But we have to do much, much more facing, as you mentioned about the challenge between the geopolitical situation of the current global community. The US is moving more to the fossil oil based policy like President Trump's drill. Baby drill is exactly the energy security policy of the US of using the much more affordable and plentiful fossil fails while China is kind of opponent for, for destruction by reducing, by using more and more renewable energy sources and nuclear, they try to reduce the use of fossil cell field.

Nobuo Tanaka (26m 40s):
So this kind of geopolitical conflict of big super energy power one is fossil, another one is more renewable than nuclear. What Japan and Korea should do, should we go with us? Should we go with China and Europe? This is a big geopolitical choice for two countries to think, to consider very seriously and to make our way out. I am always saying there are winners and losers in this game of energy security and sustainability. Yes, for the sustainability sake we need more renewables and nuclear, but for the security we have to depend also on the natural gas in the foreseeable future. So we have to take very clever decision to and making collaboration with different players together.

David Greely (27:42):
Helima Croft, Managing Director and Global Head of Commodity Strategy, RBC Capital Markets.
Has the calculus for the US changed, right? The US huge oil exporter, huge oil producer, big gas, the US really is a fossil fuel superpower. Right now on the global stage are US interests tilting a little more towards somewhat higher prices would be in a national interest?

Helima Croft (28m 13s):
So this is such a great question because you know again, in the early days of the Russian invasion of Ukraine, people who wanted very tough sanctions on Russia, that would be commensurate with what we did with Iran. Remember with Iran we did put secondary sanctions on Iran on energy exports of Iran and we really drove down Iran's ability to sell into key markets and people were saying at the time we should do something similar to Russia that this US resource endowment gave the United States an opportunity to really sanction countries in a way that we couldn't do before. But again, we made the decision at the time not to go forward with very serious sanctions on Russia that would cause a supply disruption. I mean, again, I talked about all the institutions that were sanctioned, individual Russian banks, the Central Bank notice we never put secondary sanctions on Gazprom, on Rosneft, the major Russian energy companies.

Helima Croft (29m 08s):
And the question is, has President Trump decided that now is the time to go forward with measures that would really potentially remove, if you look at India, they have ramped up to 1.7 million barrels a day of Russian energy imports like they were one of the big countries that took the supplies that were no longer going into Europe. Will India essentially become the target of a serious US effort to say you must reduce your Russian imports and again that could have some significant impacts for prices. Right now we are talking about fourth quarter that looks like it's going to be either amply supplied or significantly oversupplied. If we were to see a material drop in Russian exports, that could change the conversation about the fourth quarter in terms of prices. So again, does President Trump have the appetite to potentially deal with higher energy prices in the near term in order to send a signal to the Russians about the desire of the United States to bring this war to an end?

David Greely (30m 11s):
Are there certain signposts or actions you are looking to happen or not happen over the next few months?

Helima Croft (30m 18s):
I do think we really do have to watch what evolves on the sanctions policy from President Trump. Like if we were to really signal a willingness to go after the Russian balance sheet that could potentially change the calculations. We think about Ukraine as well, like what are we gonna be providing in terms of military equipment? That to me is gonna be the very interesting in terms of like what are the dynamics of the US when it comes to both sanctions and when it comes to weapon supplies and then also when it comes to Europe. And I think bringing it back to energy beyond sanctions, I do think this deal that the United States and the EU just announced this trade agreement with the, the 750 billion in purchases over three years of energy, undisclosed energy. And a lot of people are saying, oh my gosh, that's wildly ambitious.

Helima Croft (31m 07s):
But if we say that we don't know how we are going to get to 750 billion maybe that's again very ambitious. What we can say is we're anticipating more US LNG at a minimum will be going into Europe. And the question is, is a deal that essentially cements the loss of Russian market share. When you think about it like what are the US cargoes going to replace? They are going to replace likely the remaining Russian LNG imports into Europe. And so the question is if you are Vladimir Putin and if you are looking at President Trump prioritizing US energy exports into your most important market, are you gonna settle this war? Because one of the issues from the standpoint of the Russians is we all suspect that a key condition of at least freezing the conflict would be getting sanctions relief. And we, we do think that they are going to want access back to their most important market for energy. And so the question is can you have

a deal that ends the war in Ukraine while at the same time have these trade deals that essentially have the United States seizing basically for the foreseeable future that Russian market share. So I do think that's an interesting conversation about like these two deals, the trade deal and a deal to end the war. Are they potentially in conflict?

David Greely (32m 31s):
Then there's the issue of the tariffs, right? So we have this much wider use of tariffs, a lot of uncertainty, a lot of risk. We have seen it create wild moves in some commodity markets like it recently has in copper. I am curious how do you see it affecting the energy markets, if at all?

Helima Croft (32m 51s):
If you think about beyond some of the situation of like are we gonna have potentially more oil than we need in the fourth quarter, which I think the biggest debate right now in the market is like what happens in Q4 with the oil pitcher, but a big macro worry has been a China slowdown because of tariffs and that has just been since tariff liberation day like that has been a big headwind for oil has been the concern about the overall macro impact of tariff when it comes to demand. But then on the flip side, the use of secondary tariffs to target the exports of a key energy producer like Russia. That is the kind of flip side. There is the, the obvious bear case for tariffs, which is a demand hit and then there is tariff as sanction, which is what we could be seeing with Russia tariff as secondary sanction. That could be something again that could at least in the near term cause a drop in Russian exports to a key market India. Again, I think it will be harder to get China out of the Russia trade, but certainly I do think that India, if the United States was really serious about saying to India, we are going to demand that you make a significant reduction and those refineries that do business with us regulated institutions could be in the crosshairs. I think you could see a a significant drop in Indian imports of Russian oil.

David Greely (34m 22s):
Dave Ernsberger & Mark Eramo, Co-Presidents at S&P Global Commodity Insights.

Dave Ernsberger (34m 29s):
What we saw clearly from the US administration, especially back in spring as they were just coming into the office at Sera week in Houston where they had a platform to talk to people all over the world, the policy was around bringing all forms of energy that the market will support and tying in the more pragmatic approach to investments, not picking and choosing winners, but let the market and technology define which projects and which forms of energy will advance at the fastest pace. It was really, let's bring all forms of energy to the table, whether it be hydrocarbons, certainly renewables that make sense, where they make sense and how they make sense. So it really was a discussion around portfolio. I am sitting here in Cape Town at Africa Energy Week and listening to conversations between both US government officials or US represented companies and countries and policymakers in Africa who are having the same kinds of conversation about a pragmatic approach. So there is this balance, and again, not picking and choosing, but a sense bringing forward a, a pragmatic approach to the investments and letting the capital flow to Dave's St. Berg's point, which was where there's clarity of policy both from government and whether it be local or national and where there's opportunity to get the financing and where you can see a return. That's where the capital is flowing right now.

David Greely (35m 56s):
And Dave, one of the themes that we have followed over the past year or more is that different country's motivations for moving ahead on new sources of energy. Renewable energy is really driven by their local situations. So in the United States, because we have such a large endowment of oil and natural gas, often climate policies are seen as restrictive whereas in countries like India and China, it's a way to overcome deficiencies, get better energy security as they are more oil and gas poor. I was curious, when you are looking around the world and China and India, how much do you see those types of concerns shaping the way they're investing in energy and the way they're investing in more sustainable energy forms?

Dave Ernsberger (36m 45s):
David, those kinds of concerns are absolutely at the heart of why the three areas I pointed out China, the Middle East India are all aggressively pursuing energy expansion strategies that have renewable energy at their heart in most cases and are a big part of their future. If we just take them in turn real briefly to sort of talk about why China is the absolute classic paradigm of wanting to pursue an intensive self-sufficiency. I often tell people that China and the US are not really so different actually that drive to be in energy independent energy free is as close to the hearts of the Chinese population and policymakers as it is anybody in the us. However, the pathway for China is profound electrification, the rapid deployment of an electric vehicle fleet into the auto force, the Middle East and

India also show how when you marry a strategic imperative alongside a drive towards sustainable economic development, it's got double the chance of being successful.

Dave Ernsberger (37m 44s):
The Middle East is probably the most fascinating of all the Middle East is hydrocarbon wealthy. Saudi Arabia is literally the Saudi Arabia of the oil market and yet the push there is to build solar and renewable power to underpin what they hope will be a huge competitive opportunity to diversify the domestic economies into AI and data centers and to not sacrifice oil and gas exports along the way. Energy and electricity demand in the Middle East will probably double over the next 30 years or so. Currently 70% of the electricity here is produced using natural gas that wouldn't work and that sort of climate. So each of those areas has their own policy objective that sits alongside a sustainable economic development and it's supercharging the outcome.

David Greely (38m 28s):
As we are having this conversation, you bringing up critical minerals and India stepping forward and looking to become an exporter in the US moving into new forms like hydrogen takes me as often does back to Dan Yergin and The New Energy Map. And I was just kind of wanted to ask the two of you, it, it feels like the way we think about the world and who's producing what and who is consuming what is really in the process of changing in a fundamental way. And I was wondering how do you think about that and how do you try to keep track of all of it?

Dave Ernsberger (39m 02s):
Genuinely speaking, it's important to go deep on a multipolar scenario where actually there are very different mechanisms in play at different models that are actually very well progressed by now that are gonna have different outcomes and it is a case of spending the time however one chooses to do it, to do the research because just like when the modern energy industry was being founded in the 1890s, tomorrow's energy industry is being founded in the 2020s and nobody knows what the ultimate outcome is going to look like in the big picture, but it's going to be probably one of the iterations being formulated right now in one of the countries we have been talking about or maybe a different one. And we didn't talk about the European Union. That's all that's worth a whole episode on its own quite frankly.

Mark Eramo (39m 45s):
I am going to slant my comments towards, I will call it the downstream industries of refining, I will say refining eggs and chemicals in terms of, because I want to relate it to the changes that you talked about that are now starting to occur whether they be geopolitical or macroeconomic. And I think that the way companies are thinking about a lot of these commodity markets is what is the role of China and how will China's role either change or modify as we look to the next 20 years. And from my perspective, there was a real pivot point. If you think back to 2000 through 2020, the amount of investment that went into China, they talked about roads and infrastructure going to nowhere, but it was phenomenal. And the way they build up a downstream processing industry that ultimately was feeding the manufacturing floor for the world was mind-boggling by any lens that you wanted to look at it.

Mark Eramo (40m 40s):
Both the capital that went in the scale that they reached with these assets, the speed with which they built these industries was again nothing short of phenomenal. And it's gotten to a point where post pandemic, where you have international trade relationships changing and a lot of industries have to now pivot and say to themselves a model of build low cost in export to high demand centers like China. So all of these investments that were going in, starting with competitive energy and making downstream products and China having this huge consumption sink being a net importer as they become more self-sufficient in certain chains, it's causing a pivot. It's causing me to rethink whether it was plastics or whether it's refined products, I'm having to have a little bit different view of what that's gonna mean going forward. So now I have to couple that with again, what's happening on the energy front in terms of being competitive. How do I need to make sure that I am managing my carbon profile because I believe that low carbon products will become a market in and of themselves at some point in the future when that conversation becomes more at the forefront than maybe it has been with the recent pivots that have been going on. So I think the trade dynamics changing. So it, it really is a bit of a shift right now in terms of the world rebalancing itself and how you might think about from 2020 to 2040 versus 2020 looking backwards at 2000.

David Greely (42m 10s):
Rene Velazquez, Managing Partner, Valitera

Rene Velasquez (42m 15s):
Carbon markets are in a transition phase and some say inflection point and I think that they are the optimist and I'll subscribe to that view, but certainly it's never boring and we see effectively a tale of two cities between compliance and voluntary markets. So that's the top level view if you will allow me to indulgence to kind of go down into a deeper dive. When we look at compliance markets, we see a growth in compliance markets and just in terms of broad coverage, I lose count how many emissions trading systems now they are, but I believe somewhere close to, if not a quarter of the world's GDP is now covered with a carbon price. So I think that that's a, a really positive sign and we're now starting to see more and more distribution of that signal with regards to pricing as a result of Article 6 in particular Article 6.2.

Rene Velasquez (43m 02s):
So we're seeing the emergence effectively of systems by at the member state level in order to now cover certain sectors and pass down these price signals across those various different sectors in line with their nationally determined contribution. We think that that will continue to grow. And parallel to that should also say that you have got other systems like CORSEA that are starting to gain traction and we start to see growth there as well. When I contrast that to voluntary carbon markets, that's the tale of two cities. Whether we see resilience and growth and kind of a steadfast direction, let's say with regards to compliance markets, voluntary markets have been very turbulent. I think that that's a fair statement to make and, and obviously it's been well litigated and well discussed, but I do think that that we are in a an inflection point essentially when we look back the last 18, 24 months, the voluntary carbon market has done a lot of reckoning and quite rightly so for, for a lot of key and obvious reasons. But we have reckoned with this idea around integrity and I think that that is now mature enough and we're starting to see the kind of the next phase which is scaling and what is lacking currently is a clear demand signal. And so we still need some items to align most namely the tacit endorsement for companies to actually participate in the market. And that is in large part, driven by hopefully adoption by bodies like the Science-Based Targets initiative and others of the importance of this tool that is carbon pricing. But I do think that during this, this sort of downturn, the market has really reconciled a lot of the infrastructure, a lot of the systems, a lot of the clear transparency in imperatives and the integrity measures of the betterment of the market that will translate over time into a much more robust market.

David Greely (44m 59s):
And I wanted to dig into the real world impact of being too extreme. Like you mentioned a few of them, like clearly if the major tech companies are choosing between investing in AI and pursuing it versus decarbonizing right now, AI's gonna win.

Rene Velasquez (45m 17s):
They have a fiduciary obligation to their shareholders and stakeholders and they're not going to give up an opportunity that's worth potentially trillions of dollars. And that is one of the big tectonic shifts in recent memories. Like you are my generation, right? We grew up in sort of at the beginning of that internet age, right and it's been hugely beneficial in symmetry also depression with a lot of other things, right? In terms of pricing and kind of also providing this growth on global networks. The generation that my daughter is in, the generation Alpha folks versus our Gen X, they live, they are growing up in real time in an AI environment and that means that they can leverage these incredible tools to solve really complex problems like climate change. But there is a cost at which you know, that comes with the unlocking this very powerful tool set and that's the energy piece. If the energy transition can actually go hand in hand with the growth in AI and we see even further more accelerated growth for renewables and battery storage and other forms of energy that don't result, for example nuclear that result with greenhouse gas emissions going into the atmosphere, then that's a good thing. If we don't use AI for, let's say not so positive climate benefits, like enhanced oil recovery tools, but we actually use them for helping to speed up technologies in the removal space for example, then that can be good. But like any tools, it's who wills that tool that ultimately dictates what is the outcome.

David Greely (46m 45s):
The reason I asked you the prior question is because I think there are still a lot of young people, many being young people, or at least younger than you and I, who want to get involved in climate work, who want to get involved in carbon markets, carbon financing, project development. And I think that path has become less certain, more ambiguous, more difficult to access for many. So I was curious, if you were to give advice for folks who now want to get involved, what would that advice be?

Rene Velasquez (47ms 16s):
This is such a key area of passion for me. What I would say is focus on the problems that really resonate with, that are either existential or that you think that you can provide value in terms of providing a solution for focus on solving those problems and you will find a very rewarding career path cover markets as, as per our conversation we've highlighted at this really amazing inflection point. They are growing, they need greater participation, challenging new ideas, challenging the status quo. We need new blood and some of that is disruptive, but some of that is really constructive and I really think that because the young people I'm talking, you know, Gen Z and eventually Gen Alpha, they are the ones that inherit the world right after you and I are gone, which may not be for a while, but ultimately they are the ones who inherit the planet next. And if ourselves, our generation, our predecessors have left it in a much warmer context, they have now a vested interest to try to rectify that solution. So come up with solution, focus on that help to accelerate the energy transition, help to accelerate the growth in carbon markets, help to whatever motivates you, make something and deliver something we change.

David Greely (48m 34s):
Mark Lewis, Partner & Managing Director, Climate Finance Partners LLC and Former Head of Research, Andurand Capital

Mark Lewis (48m 44s):
The EU ETS is still very much the global benchmark compliance market. Still the largest market, the most liquid daily auctions. So pricing in real time with very decent liquidity. 35,000 to 40,000 lots traded every day on the EU ETS across the strip And one other feature of it, of course that I should have mentioned in that summary is it's the longest in existence. It's been going since 2005. We are now halfway through the lifetime of this market. It started in 2005, the cap is falling to zero by 2040. So this is a market that's been up and running for 20 years and basically it's only got another 15 years to go, at least as the legislation is currently written, we will see what happens as these geopolitical pressures from Donald Trump kick in and tariffs potentially kick in. But right now we are over the halfway mark in the lifetime of this market.

Mark Lewis (49m 48s):
And the rubber is about to hit the road in a big way because a very, very key development. Next year we have the CBAM, so-called CBAM, carbon border adjustment mechanism, which is effectively a carbon tariff that the European Union will place on imports of goods covered by the scheme to ensure that European producers are not at a disadvantage in their own market from foreign producers of steel and cement and so on. And this is going to change we think market participants' behavior. And perhaps just to step back a little and explain to our audience the significance of this, I mean this is a market that from day one, so from the 1st January 2005 where price formation has been driven by the power sector. The power generation sector, right? They are the ones who have had to hedge forward and take carbon pricing into account when they're selling their power forward is it's essentially just another commodity like coal or gas that they are using for their power generation.

Mark Lewis (50m 52s):
They buy coal and they buy carbon, they buy gas and they buy carbon. And because they hedge forward, typically they sell their power on a rolling three year forward basis. That's why they have always been the main driver of prices. Now of course Europe is decarbonizing in the power sector very quickly. We have renewable energy capacity coming onto the system every year and it is displacing the older fossil fuel generation capacity. That means in turn is we need the industrial sector to step up and start hedging their forward liabilities in the same way that the power sector in the past did. But in the future will not be doing because they have less and less of a requirement to do that because more and more of their generation collectively is coming from renewable sources. So I think this is an absolutely crucial moment in the development of the EU ETS, which will be watched very closely by other jurisdictions that have compliance markets because the EU ETS, as we have known and loved it since its inception, is going to go through a big identity change as industrials step up to take over from utilities as the main driver of prices.

Mark Lewis (52m 06s):
Because what we are looking at now between now and the end of this decade, and in fact all the way down to 2040 now is annual deficits where demand is outstripping supply. So we should start to see prices move structurally higher over the next five years, between now and 2030 as we find that abatement price point for industry. What's the price at which industry can reduce emissions? That's logically that's where the price has to go. Now is it a hundred, 150, 200? That's what the market will have to figure out over the next two to three years.

David Greely (52m 47s):
Maybe we could then also look at bringing in the Article 6 markets. So there has been a lot of focus there on that development, people looking at that being a new way, you know, potentially bringing some more voluntary carbon market projects into the mix. I am just curious, how do you see all this affecting the development of the Article 6 markets?

Mark Lewis (53m 07s):
I think this is crucial and I do think there is now an opportunity here. Europe realistically is going to have to lead the way on this, right? So they really have to find a way of squaring the circle, which is, and when I say squaring the circle, I mean how do you ensure that European industry remains competitive when energy prices are already much higher than they are in much of the rest of the world and certainly a lot higher than they are in the United States and North America. Generally, how do you avoid putting even more competitive pressure on European industry whilst at the same time ensuring the carbon price is high enough to send a price signal that decarbonize industry without forcing industry out of Europe? That's the stark choice, that's the circle that has to be squared. And in particular that debate which is coming I believe in probably 2026.

Mark Lewis (54m 02s):
You know there is a review of a number of features of the EU ETS and very much on the table will be the question of what kinds of offsets or removals will be allowed into the EU ETS beyond 2030 because from 2030 onwards the cap is declining in linear fashion to hit zero by 2040 and today in 2025, the cap is around 1.1 billion. So we are going from 1.1 billion tons of allowed emissions to zero tons of allowed emissions. People often forget whilst the EU headline target is a net zero target, the EU ETS falls to zero in absolute terms in terms of the cap by 2040, this is an absolute zero as it is written at the moment. Now I don't think that's going to be possible to retain. So to me the obvious solution is to allow credits that can be generated at scale and credits that are compatible with the accounting framework of the UNFCC's Paris Agreement into the EU s beyond 2030.

Mark Lewis (55m 20s):
And we can debate the volumes and how much of the abatement that needs to happen should happen domestically and how much should be offset via the use of Article 6 credits with corresponding adjustments. But in my view, I am not aware of any other instrument that is gonna be scalable and that will have by definition the environmental integrity that will allow Europe to say yes, we are allowing offsets in, but the fact that the only offsets allowed in are article six credits with corresponding adjustments and that means that if we are buying from Brazil or Mexico or India or whoever they are having to reduce their emissions further so that they comply with their Paris obligations, then it's a win-win. You are reducing the overall cost of compliance in Europe whilst ensuring the global agreement on emissions reductions through the Paris Agreement is respected. Now that's how I think in an ideal world, Europe should approach Article 6.

David Greely (56m 27s):
Hannah Hauman, Global Head of Carbon Trading at Trafigura

Hannah Hauman (56m 30s):
So as we are really looking at the landscape going forward within Article 6 and actually something you and I have talked about before is this concept of we are creating kind of the first real global carbon market, not in the form of everything is homogenous and everything is the same, but that everything is standardized and that you actually have the ability to have differentiated preferences on top of a standardized framework. So that Article 6 rule book that's now being developed means that we now actually have centralized registries. We have defined methodologies or project types that are eligible compliance grade for international trade and then also kind of the rule book for what countries need to do in terms of participating either on the buy side or on the export side. So when we think about quality and how we kind of define that new definition of investment grade, we see a lot of the same home works as we did before.

Hannah Hauman (57m 24s):
So things like what is the actual operational quality? Does it deliver when it should, how much it should? And on the timing that it should. So all of those things still exist is these are still underlying physical assets behind the credits, but the new, let's say variable that we have put into play is now export grade or export quality, which within an Article 6 context just means the exporting country has not only given approvals for the project but has also issued a corresponding adjustment or export approval for that credit to now be traded and now be legal tender within Paris Agreement balances. So that is an entirely new paradigm that the market is now grappling with. It is less infrastructure based, so not so much reliant on digital tools or methodologies, but very much policy-based as now you are

needing countries to decide from an exporting basis what types of activities do they want to export, what are the appropriate export fees, how does that change over time?

Hannah Hauman (58m 31s):
Do they want to have a subset which is whitelisted for domestic, a subset for international, so on and so forth and all we are kind of doing is putting additional policy layers on top to enable this global trade, but in truth it's not that dissimilar to what we see on every other commodity. So we have some playbooks to pull from, but that's I think really how we're changing the definition of what investment grade is, is we have now added this additional criteria on does it have export approvals and is it now legal tender under Article 6.

David Greely (58m 55s):
I would like to turn now towards something you've been referring to and you are speaking to this on your panel tomorrow, which is that we're seeing many national and regional compliance schemes, compliance markets developing and ramping up around the world and what do you believe are the most important developments that people should be watching? Like what are the big macro themes that you are following?

Hannah Hauman (59m 12s):
It's pretty incredible at the moment. I am sure I have said this in the past, but I think the headlines are almost a challenge to keep up with frankly because of this, the pace and the frequency of iteration that we see and it's not really any one single market, it's kind of everywhere all at once at the moment. So to kind of boil that up to the macro themes that we are seeing, I think one is a general growth for the first time in the last few years of true compliance demand. So we are all used to seeing these charts that say X amount of GC emissions under carbon pricing and nominally that looks like it increases every year. The reality has been that actually free allocations under the schemes means that your net demand or your real compliance coverage has actually been pretty stagnant for really the last four years.

Hannah Hauman (60m 04s):
And I think this was a bit of the, the whiplash that the market had when we are preparing for all this growth and actually governments weren't necessarily tightening the schemes in the way that everyone intended that is now changing. So as we look into next year, what we are now seeing is for the first time a very real lift in things like reduction of those free allocations, which is overall increasing the total compliance demand. The second piece of this I would say is beyond I would say just existing markets that are now having kind of new levers and tightening, we are seeing on a widespread scale the incorporation of credits within the regulatory design. So in some instances that is domestic only. So again, I will use Europe as an example. Historically, Europe's been against credits within the compliance scheme but is now unveiling the EUCRCF, which is now deeming removal specifications with the intention to bring it in from post 2030.

Hannah Hauman (60m 56s):
Other jurisdictions are incorporating it into the regulatory markets for imports. So markets like Korea, markets like Japan that are actually leveraging Article six to be able to pull in those Article 5 credits via the domestic regulatory scheme. So I think those two things we see as kind of the big trajectories coming, one being just a generally larger market in the terms of net demand and governments getting more comfortable going up those next layers. And the second is the concept of credits and specifically domestic or internationally traded credits really at the core of each of these designs.

David Greely (61m 35s):
And so as we move into this world where the emphasis and the focus seems to be much more about the climate action that countries are taking rather than corporations, I kind of wanted to get your sense of how countries are thinking about their climate action and in particular when we think about framing of environmental goals, like what are the main factors shaping different countries ambitions and their NDCs.

Hannah Hauman (61m 58s):
We start a lot with companies but especially countries on what does this do reputationally, how am I making a name for myself? How am I stepping forward? So again, much more offensive and framed a little bit more within the frame of philanthropy that has changed really substantially to be one that is now much more about energy security or energy independence, much more about trade relations. There is a little bit going on in the world right now about cross-border trade in particular for example. So if you actually look, each

country is slightly different in terms of their focus, but it it's not about necessarily doing good things, it's about how they are protecting their long-term competitiveness of their countries and their economies. So for example, yesterday I was listening to the state legislature of California talking primarily about air quality. And yes, CO2 reductions is obviously also a core pillar of this, but what their citizens experience every single day is actually the air quality difference of when they are able to reduce emissions.

Hannah Hauman (62m 57s):
If you speak to other players in Europe for example, it's very much about energy independence and how are they building out renewable capacity so that they are not reliant on foreign fossil fuel imports. If you travel elsewhere in the world in New Zealand, they will talk a lot about erosion. So a lot of their carbon pricing and carbon scheme relies on actually afforestation and creation of new forests to really just protect the island from desertification and erosion of the natural environment. So again, every government has slightly different kind of views of how they are pursuing this, but pretty much every single one is focused on self-interest on how do I ensure affordability for my citizens? How do I reduce things like insurance damage, which is becoming an increasingly hot topic and then on the international side of things, how do I improve those trading relationships in a multipolar world? How am I strengthening those key corridors with those nations I am already working with in order to reduce my overall medication cost? So again, I would say highly varied but with some very core centralized themes there.

David Greely (64m 01s):
Theresa Kammel & Pierre Buisson, Originator & Senior Structurer, Weather & Agro Zurich, Munich Re

Pierre Buisson (64m 08s):
I am in the energy sector so quite some years starting kind of counting and actually I didn't come directly to energy trading floor. I actually spent the first few years as advisor for government and large corporates in energy and climate negotiations. So I really started working on supply side risk in big international meetings. Also working during COP 15 and COP 16 with governments on energy transitions, carbon markets, all these type of elements really mostly carbon policies and energy transition. And this is why I started to seeing that that market, the energy segment in general is massively changing. There are tremendous changes. It's about new regulations, it's about new technologies, it's about really kind of market designs, et cetera. And when I was working as a, on a trading floor in a large power utility in Europe, I was always been very surprised to which extent kind of the volume weather risk was underestimated. This is why I thought that to some extent kind of weather derivative is one part of the equation. It's one thing that is trying to put a price on the weather availability, availability and this is what actually brought me to the world of Western derivative. Trying to kind of say, okay, that's where I believe that kind of we can bring financial spective, we can reach energy, knowledge and at the end still helping people to deliver energy from a supply side to a demand side.

David Greely (65m 38s):
And let me come back to you Theresa. Now I think climate change has made all of us aware of the increase in weather related risks, the volatility of the weather, but I think most people are unaware of the increasingly sophisticated ways they can manage that risk. Listening to Pierre, it's a lot of tools that have been brought over from the other financial markets, a lot of data that can be brought to bear and I wanted to ask you, as you work with clients, how aware are they of the level of sophistication with which they can manage weather related risk now and how do you help educate clients about these tools that are available to them?

Theresa Kammel (66m 20s):
Yes, David. So I think it's absolutely true that the general awareness of like weather and climate related risks has increased over the past years in the general public. If we look specifically at our client base, I think you can like divide them up into almost two camps. On the one side we have like really sophisticated clients and on the other side we have very like big players but they are not fully aware yet of what their weather risks are. But let's look first at the sophisticated clients you can think of like big utilities or big hedge funds, hedge, they have dedicated weather teams or at least weather traders and with a specific mandate to always be on top of these risks, how the weather is evolving, how they might have to adjust your positions and with those clients they know exactly what they want. With them it's more sort of a collaboration where we work over various months on like complex structures as Pierre pointed out. And that's where he usually comes in. He is the go-to structure for these kind of deals. Like we work very closely on these structures to come up with a customized solution that actually like perfectly fits the client's exposure and that's also so where whether derivatives is this great tool to be really creative because you can structure them in very creative ways. If you look more into the second category, like the unaware but established players, there is a different game. So we try and go and understand what are these risks, what tools are available, and then try and work until we maybe come to a deal. And that often would take like a year or two years. It's not a very fast process and it's certainly not a one-off conversation.

Pierre Buisson (68m 13s):
I find your question very interesting and actually trigger a thought here because you said enough that obviously a power utility of involving a power generation from renewable assets kind of, I mean should be fully aware of that risk and should be active in that segment. I find it a very interesting comment and of course, I mean that sounds, it may sound obvious to everybody listening to that podcast that okay, I mean that's you aware of that risk, but actually what we are seeing is kind of there are some players very active there and very aware of that. Some others they thought it's part of their DNA to have to warehouse that risk. It's almost like kind of I'm building a wind farm for example. There will be years or month with less win, more win and thing and it's the natural uncertainty of the business and I have to deal with it and actually it's not true. They do not have to necessarily kind of fully carry the burden by themself. They can actually share it, they can find a way of actually mitigating it. And I still that find it very funny that when you discuss sometimes with even very large utilities, you have those who are extremely aware and some other people that say, I have to take that risk. It's in my natural obligation, I am active in that segment, therefore I have to carry that risk. No, it's not true. You can actually hedge it as you would hedge as you are hedging yourself against commodity prices and against ethics rate against other type of risks that, and you're doing that every day, why do you think it's not the case for the weather? And when you ask that questions very often people say, I don't know, it's just that I thought it was in my mindset.

David Greely (69m 46s):
Right, it's the old thing, right? Everybody talks about the weather and no one does anything about it. How big are these weather related risks? If you put a dollar or euro or Swiss Franc number to it, like how big financially are the risks that many of your clients are facing

Pierre Buisson (70m 03s):
In Europe we faced over Q1 in 2025, a massive, so the first quarter of 2025, a massive wind drought. So if we look at the different countries and different markets, wind was between 20 and 30% lower than average. It had a massive impact. And I look at, for example, Germany and Germany was 20ish percent below the, let's say an average wind performance for the assets and then if you take that number and you multiply with current forward prices on the market that basically those 20% of missed opportunity in terms of production, that represents 750 million Euro in terms of missed opportunity. So you are not very far from a 1 billion and we are talking about Germany in one quarter. So indeed we're talking at if you just do that on all the geographies and if you do that for the different markets, we solar IO the temperature on the demand side of thing. We are talking big numbers here.

David Greely (71m 11s):
We hope you enjoyed the first half of our 2025 Holiday Special, the year in review. We will continue looking back to the big themes of the year next week in part two of our Holiday Special 2025.

Announcer (71m 20s):
This episode is brought to you in part by Abaxx Exchange, bringing better price discovery and risk management tools to navigate today's commodities markets through centrally cleared, physically deliverable futures contracts in energy, environmental, battery materials, and precious metals markets. Smarter Markets are here. Contact sales@abaxx.exchange to get started.
That concludes this week's episode of SmarterMarkets by Abaxx. For episode transcripts and additional episode information, including research, editorial and video content, please visit smartermarkets.media. Please help more people discover the podcast by leaving a review on Apple Podcast, Spotify, YouTube, or your favorite podcast platform. SmarterMarkets is presented for informational and entertainment purposes only. The information presented on SmarterMarkets should not be construed as investment advice. Always consult a licensed investment professional before making investment decisions. The views and opinions expressed on SmarterMarkets are those of the participants and do not necessarily reflect those of the show's hosts or producer. SmarterMarkets, its hosts, guests, employees, and producer, Abaxx Technologies, shall not be held liable for losses resulting from investment decisions based on informational viewpoints presented on SmarterMarkets. Thank you for listening and please join us again next week.

Part Two

Josh Crumb (00s):
So assets, securities, commodities, the rights and title to commodities. These all live in the law and these all live offline, so it's very hard to reconcile that natively into the ledger. That was the problem that we have been working to solve is not just reconciling the ledger, but multi-party reconciliation of legal claims. That also can give that, again, that machine readability, that machine verification that can speed up commerce and, and speed up trust in the system.

Announcer (30s):
Welcome to SmarterMarkets, a weekly podcast featuring the icons and entrepreneurs of technology, commodities, and finance ranting on the inadequacies of our systems and riffing on ideas for how to solve them. Together we examine the questions: are we facing a crisis of information or a crisis of trust, and will building Smarter Markets be the antidote?
This episode is brought to you in part by Abaxx Exchange, bringing better price discovery and risk management tools to navigate today's commodities markets through centrally cleared, physically deliverable futures contracts in energy, environmental, battery materials, and precious metals markets. Smarter Markets are here.

David Greely (01m 19s):
Welcome back to our Smarter Markets Holiday Special 2025, the yearend review. I am Dave Greely, Chief Economist at Abaxx Technologies. We are continuing to revisit the conversations with our guests that helped us understand and articulate the themes that would come to define 2025. 2025 was the year in which we discovered that this was not the energy transition that we were expecting. The year in which a new geopolitical reality emerged and old geopolitical concerns resurfaced and it was the year featuring a tale of two carbon markets and the need for new weather markets to manage the risks posed by reliance on renewable power and finally, 2025 was the year in which there was both a new gold rush and a rush into tokenization. We hope you will sit back, relax and enjoy part two of our 2025 year in review.

Josh Crumb, Founder and CEO, Abaxx Technologies.
You have launched Abaxx Exchange and Clearinghouse, introduced nine listed futures contracts from LNG to environmental products in the carbon space to battery materials and now you will be listing a gold futures contract for delivery in Singapore. That will be the 10th listed futures contract at the exchange. So now you are kind of back to where it all began again and so I wanted to ask you why Gold now? Why in this way?

Josh Crumb (02m 45s):
We always had on the list or I had on the list problems just going back the days working with you and, and Jeff Currie at Goldman. Some of the market structural problems that I saw or we saw was LNG, the nickel market, obviously the emerging markets like carbon and battery metals. What really gave me the idea that gold also had had an opportunity was what happened during COVID and the pandemic and the first time that the EFP, the difference between a hundred ounce bar in New York and a 400 bar in London that blowout immediately put gold on our list, there is something else to be done there. So again, it, it always starts with a problem rather than just going in and into a market that's already being relatively well served. If I just look at the order of priority, the one thing that gold, we weren't able to launch gold right at day one, even though it's on our list for a long time, was the spot market aspect was unlike our other futures markets because we are also launching a central limit order book on spot gold in a warehouse or in a vault.

Josh Crumb (03m 46s):
So that actually had more infrastructure to build than just the futures. Otherwise we probably would've listed the gold future before. But ultimately it's also, and I know you talked already a lot in the previous episodes about this, but it's really the gold is the first market that can really bring all of that together, right? Like a new spot market in vault, you know, very much like we built at BIP Gold you know, many years ago tied to a futures market that's a regulated clearing house. And then the third piece as you know is we also want to use gold from that spot market or in that vault as collateral in the clearinghouse, but collapse the settlement time and the clearing time much faster by using this digital signature technology. So the gold market, again, it's always been on the list, it's always been core to the vision and now it kind of jumps from being our, our fourth market to our first fully integrated market of the future with spot real-time digital collateral as futures all in the same place. So yeah, I mean it's quite exciting that this will be the first sort of full stack innovation from the ground up from technology to the way that the market functions.

David Greely (04m 55s):
We all know that right now gold is having a moment, it's capturing a lot of attention and you are introducing this first full stack application into the market right now. How are you thinking about the current macro environment for gold?

Josh Crumb (05m 10s):
The reason why gold works as a measurement tool, as a representation of money is because it's so highly correlated with energy. At the end of the day it's energy that's really the lifeblood of the economy, well energy and information, but energy itself is the much larger money stock but you know, as we discussed at the beginning, energy can't be stored the same way going all the way back to cane's and the Bancorp and everything else, right? Oh, if we could just take all commodities and make that money and not just gold, that'd be a better system. Well ultimately by using gold as a substitute for all commodities because they all have the same energy basis, that's sort of what currency is. Currency really is just a representation of energy, energy and economy across borders. So I always thought that gold was going to be a piece of the re-anchoring of these monetary systems post quantitative easing, but I actually don't think gold is the most important piece of that re-anchoring.

Josh Crumb (06m 05s):
I actually think it's all commodities and particularly energy and you know, and that was another reason why we have liquified natural gas at the core of the exchange, not just gold. I actually think LNG I actually think it's already there. I think LNG is the global commodity of energy balancing around the world very much like oil was for many decades. I think LNG is becoming the energy basis of the global economy and the main reason is because oil is becoming a byproduct to the gas market in the US. Once oil becomes a byproduct, you don't have the same level of control as you had with OPEC and all of the other geopolitical events before. I do think that energy is the more important re-anchoring of the monetary system than gold. But gold will play a role and energy will be a key part of it as well.

David Greely (06m 53s):
Given how central the gold market has been to shaping your thinking on the role of market infrastructure and technology and making markets better, making them smarter, how are you thinking about the role of gold in our financial system in the future?

Josh Crumb (07m 08s):
If you can get the collateral side right, if it can be hedged and moved as fast as you can move treasuries today, it will in my view, it becomes a higher, better quality, high quality liquid asset as collateral. I think your first episode talked a lot about that. There's two aspects of being good collateral. You know, one is the actual fundamental soundness of the asset, but the second is just the speed at which the speed and liquidity of which you can utilize it. How fast can you trade it? How easily can you hedge it against other currencies? I think the fundamentals for gold versus sovereign bonds kind of speak for itself. All throughout history there is not a single sovereign bond over any real period of time that's outperformed gold as an asset. I think the quality of the asset has never been in in question, but it's the liquidity and the ability to move it around the financial system that's been the problem. So if we solve those two issues of liquidity and portability and fungibility, I think gold just becomes a superior asset, particularly in global trade. So look, I think it's already happening now at the kind of central like abstract to the central bank layer. Obviously there is already been central banks rotating out of multi currencies US dollars and into gold as just a central bank sort of core collateral. But I think even at the trade level that will start happening sooner rather than later as well.

David Greely (08m 30s):
Steve Lowe, Strategic Advisor for Precious Metals, Abaxx and Former Managing Director, Co-Head of Global Base and Precious Metals, Scotiabank.
When you look at all the money that's going into and then sometimes out of and into the gold market more into than out of recently and people as you said globally looking for an alternative safe haven to the US dollar. When you look at the infrastructure that's available in the gold market to handle those types of flows and that increasing use, how do you assess it and what do you think is needed?

Steve Lowe (09m 08s):
I don't give it a very good mark and it to me it's a real shame that I will call it gold is having its day so to speak in terms of as an asset class. And maybe it's the beginning of a day that lasts for centuries, I don't know. But overall the infrastructure and the way gold trades is still incredibly fragmented, incredibly opaque and just incredibly difficult to do and I think maybe we will talk later about various technologies and various people that are trying to do certain things. The World Gold Council will call it as sort of the main driver of trying to build demand and ecosystem in the gold market. They acknowledge completely that if infrastructure and transparency and all

these things were in the market and if the infrastructure for people was there to allow them to trade, I mean demand would be twice as much, right?

Steve Lowe (09m 59s):
I mean people always find a way. So maybe not twice as much, but the gold markets really missed a trick in terms of evolving your gold trades exactly the same way it trades. When I started to the market, which is a long time ago, nothing really has progressed and there's been lots of, we've got a gold token here, we've got this there. But overarchingly nothing has really changed. I can tell you 'cause I looked at it recently, I want to invest in gold. It's so tricky in terms of how to do it and it just shouldn't be right. It should be a no brainer. I should be able to go to anywhere trusted and even here for me to buy like DTF, it's just complicated and it just shouldn't be and it should be so straightforward. But it's not.

David Greely (10m 44s):
And why do you think it's not what's standing in the way

Steve Lowe (10m 47s):
That's the old, if it ain't broke don't fix it and it, it's a really good question in terms of why the drive, 'cause you think okay, there is enough demand, why aren't people clamoring for an easier way to do it and I just think they look and they just put their money elsewhere. Like, okay, I won't buy gold, I will buy, you know, buy a gold mining stock. It's so much easier to do that. There are a lot of, from an institutional big players who are just very sedentary and very happy in their business lines don't feel a compelling need to change anything because they're making money and sort of the concept of changing everything to build a bigger pot, it almost goes against their human nature. I don't want to build a bigger pot, I got a pretty good share of this pot. So I can guess that I might build a bigger pot, but I might put some of my pot at risk and I am not sure I am going to do that. And quite frankly, my pot's big enough so I am just going to do that. But that's at a very institutional level and as I said, it's a fidgety business, right? It's an asset class that has different forms, different purities. There is an issue with traceability in terms of okay, where did it come from? So it's not so straightforward in terms of dollars, currency, trades are easy, asset trades are easy, gold's it's a bit messy.

David Greely (12m 01s):
I do want to ask you, when you think about the role that gold could play in our future, what do you think that role could be? And given our conversation about your career at Scotia, what do you think the next iconic gold business could be?

Steve Lowe (12m 19s):
I think literally gold plays the role it should play. So people, my wife included always says, why does gold have any value whatsoever? Like it's just a thing, right? It's just a scarce commodity, it's just a store of wealth. And I hate to say it just because it's right, it's been a store of wealth and something that people have wanted and has really retained that wealth for thousands of years. So if you need a safe haven, if you really need somewhere to park your money, I can't believe there is any long-term better asset then gold. I mean there's obviously over periods of time, yes real estate's good. Gold is a great place to just do that. So in terms of, I don't think that role will change. Will it be a foundation for currency? Will we go back to that? In my opinion, not a chance, right?

Steve Lowe (13m 01s):
It's just not going to, there's not enough, it's not intricate enough. But will it remain this slightly esoteric asset class that people invest in this store? Absolutely, the next great trade and what people are doing is to just build the system and the rails and the ability for people to do that properly. And you know, working with various companies to try to do that because it's such a brainer. If we can make gold really accessible to people in a trusted fashion, which is the real difficulty, right? If you have something that's not a physical bar, if it's backed by a physical bar or it's a promise that the physical bar is there, that's where a problem occurs. How do you build that trust? But it's possible, it's clearly possible if you can design that and build that one and I don't know, and gold price will skyrocket for the first part because people have ready access to it in a super liquid market and that's a global market. That's its role and it's a great role. Not gonna change.

David Greely (14m 06s):
Sunil Kashyap, Managing Director at FinMet Pte Ltd. in Singapore.
It's very interesting, right because in finance the first thing you learn about is the risk-free asset that everything else anchors and especially in the US we are used to thinking of that as the US TBI is the safe asset. But you know, in a world where there is more geopolitical upheaval, more uncertainty about the dollar, certainly you know gold becomes much more interesting. And if you're not in

the US it's a more interesting potentially risk-free asset. One of the things you said when we talked the last time that really stuck with me was how gold has much more of a role, almost means a foreign exchange for people in Asia. And when you talk about gold from a more western perspective, a lot of the conversation still floats around large banks and central banks as the main players. So I was curious, do you think the West has something to learn from Asia in terms of gold being used more at the personal level than say at the level of the big banks and central banks?

Sunil Kashyap (15m 15s):
I think there's two aspects I would talk about. One is subject in terms of why is gold different? You mentioned safe haven. The important reason why gold is a safe haven is that unlike almost every other asset group, gold is not a liability on somebody else's balance sheet. So I think what people in the west are beginning to realize, something that people in Asia knew all along is that when you have issues with regard to the issuers of certain assets, whether it's equities, bonds or foreign currency, when you have issues with the actual issuer of that asset, then you start getting worried. And the only asset which can provide that safe haven where there's no issuer involved is gold. In the past when you thought about safe haven, like you said, you people say, okay, sell equities, buy bonds. But now what you find is, okay, who is the issue of the bond, the US government, who is the US government, right?

Sunil Kashyap (16m 15s):
And that's becoming clearer to people every day that the US government is not, you know, sort of widely held managed entity. It's actually managed by a small group of people who can change government policy at a whim. Okay, that was something that's a huge surprise. People thought there are checks and balances that you can't change policies overnight, but it's happening. So that uncertainty about the actual issuer of the old safe haven T bills is creating a problem and that's why people are gravitating towards gold. And that's why you've seen gold prices go up so much and continue to go up. So every day when you talk to, when you listen to analysts in the west, right, they say we like gold. Why? Because they implicitly they are saying we are not comfortable with T bills. I like we used to be. So I think that's where sort of the west and east now are coming towards the same view.

David Greely (17m 07s):
And as they come to the same view, you know it's interesting in the West, as you said, for decades gold has really existed outside the mainstream financial system in Asia it's probably been somewhat in parallel, but you know much more part of the mainstream. What do you think we need to do in both the west and in Asia to integrate gold more into the mainstream of financial systems and people's asset portfolios?

Sunil Kashyap (17m 39s):
Let's start with Asia. In Asia, the investors are brought up from a very young age knowing that gold is a valid asset group, right? They see their families buying gold. Gold is exchanged during weddings, during New Year celebrations, during family events. So they see that physical gold being exchanged itself. This is a store of value, this is something you need to invest in. So I think that's inbuilt there. I think in the west, the west is driven largely by financial advisors and brokers, right? And the commissions they can earn on gold or trading of gold is so small because the gold market is so efficient that they typically don't recommend gold, right? They prefer bonds or equities where the spreads are better for them. And what you're finding now is that they are gravitating towards it because their customers are asking for it, right? And there is no other option.

Sunil Kashyap (18m 40s):
And so people are buying gold. What is missing in the west still is it's not easy to buy gold. I mean the only real viable options are, are the ETFs, right? Physical gold still is not easy to buy unless you, you are awake late in night and flipping your television and you see these adjectives for gold. And even there the markup is like 15%, 20%, right? In Asia, the markup is less than half a percent, actually a quarter percent, right? So it's an efficient financial asset to buy even in physical form and it's not efficient in in the west here. So I think where we you are going to see is a situation where if consumers in the west can buy and sell at very thin spreads over a physical price, there will be a greater adoption of the product in physical terms.

David Greely (19m 33s):
There have been a number of attempts over the years to build financial gold markets in Asia. And I am curious, Sunil, from your experience, what worked, what hasn't and what do we have to learn from these past efforts?

Sunil Kashyap (19m 47s):
What hasn't worked is taking a contract from the west and trying to transplant it into local markets, whether it's a futures contract or it's some kind of a physical contract. I think people in Asia want a closer relationship between the financial asset that's been traded and the physical underlying it. They want fungibility between the two. They want deliverability between the two. And so I think that's one of the reasons why it's not worked out. Where it has worked is like I mentioned, where you have created some kind of a digital wallet, which is trades 24 hours a day with very thin margins, is backed by physical and allows somebody to trade in local currency and very small transaction sizes. So because Asian economies are smaller, this disposable income is lesser. People in in Asia want to have a product which they can buy or sell in small lots with margins. And I think that's something that has been successful. There is a lot of people who offer digital wallets across the region and they've been moderately successful. More so in countries like China, in Thailand and in India and there's been fledgling attempts in Indonesia, Malaysia also to the same product. So overall the financialization of gold is taking place but in a different way compared to the west.

David Greely (21m 20s):
Wade Brennan, CEO and Co-Founder, Kilo Capital.
I wanted to talk with you about the role of gold in the 21st century because at your company, Kilo Capital, you work with companies that use gold as part of their business and you use the tools of bullion banking to connect these users of gold to the wider market of banks, central banks and investors. So I thought we could start there with a term that not everyone may be familiar with. And so I wanted to ask you, what is bullion banking and what role does it play in the gold market of the 21st century?

Wade Brennan (21m 58s):
Sure. So bullion banking is really about facilitating the activities of the real world companies that manufacture or wholesale or process gold and products that contain gold and really these companies borrow the gold instead of buying the gold and that allows them really to solve two big problems that they have. The first is they need to finance that asset. In some cases it's the biggest asset they have in the whole company. And the other big thing that it does is it helps them be agnostic about really what happens to the price of gold. If you think about a jewelry manufacturer, the jewelry manufacturer, let's say, you know, they needed a thousand ounces of gold to make some rings and they intend to sell these rings to Wal-Mart when they're finished and if that jeweler just went out and bought a thousand ounces of gold and then went about the business of turning that into rings, then when the day came to sell it to Wal-Mart and Wal-Mart said, great, what's the price of gold? And I'll buy those rings at the price of gold plus the per widget markup that we talked about, that jeweler is gonna make or lose a lot of money and it will have nothing to do with making of jewelry.

David Greely (23m 14s):
And I'm curious from your vantage point and from your seat, what do you see as some of the biggest problems or inefficiencies in today's gold market?

Wade Brennan (23m 23s):
It strikes me as odd and I think your guess Sunil Kashyap, I think it was last week, he pointed out that with the price, the spot price of metal being determined mostly by what the local London price is globally, that can cause some real friction and he was describing, you know, hey we have got this situation where you got dealers trying to buy at the London price and sell at the New York price because you know, you can point at both of them and they're very widespread and he saw, you know, he pointed this situation out as happening in in his market. And you know, I would say here it's very similar, right? It, I would say one of the bigger challenges is the whole world is using the same spot price, which you know, doesn't tie to the futures market that most of the world uses or the local delivery markets. And so the fact that we have that two track system with two different deliverable forms in different locations, well historically it wasn't a problem until COVID hit. It's become a much more acute issue over the last few years.

David Greely (24m 28s):
Another point that came up when we were talking with Sunil Kashyap last week and that was when kind of talking about the attitude towards gold among private investors in Asia versus the west. And he raised the point that in many Asian countries and also developing economy countries, people are used to policy being unstable and their government being unstable. And so gold is seen as a stable asset much more so than government debt. And in the West we've had a very different experience of people think of a TBI as the risk-free asset in the United States. And I am curious, when you look at very early innings obviously, but do you see that conversation starting to change at all in the United States and among your customers? Or are you seeing more investors giving gold a look as a, a stable store of value?

Wade Brennan (25m 35s):
You know, I think the conversation has evolved here in America. You, you know, the, the more recent uncertainty is definitely underscoring this issue and, and maybe making North Americans think about this in a way that we have been fortunate not to have to think about for a long time. We haven't had a good credit crisis in the west in a really long time. I don't think most people remember what it's like to take a bath on a bond. So, you know, there is a lot going on there. I do think that situation is evolving and, and I am not necessarily a crypto enthusiast. I think what's been productive about that movement is the discussion of what is a fiat currency, what is the, the reliability of some of these instruments and you know, something that the people in, in more developing nations have known for a very long time. It does seem like there is a growing awareness of gold as, as true money really growing, you know, here at in America.

David Greely (26m 37s):
When you think about what you would like the role of gold to be in the 21st century, what improvements do you think we need to make to our gold markets, whether it's in market infrastructure or new technologies to allow them to take on that greater role in the 21st century?

Wade Brennan (26m 55s):
You know, I think the biggest thing is we need a hedging market which is tied to the underlying local market price. And you know, again, I go back to what Sunil said, where, you know, they don't know what the price of gold is in Asia when there is a disparity between London and New York. And why is New York pricing its spot on something in London like is that's legacy. It's the grandfathers were there 300 years ago. Wonderful. That's probably time for some modernization, right? Having some spot market here in America that referenced the American spot price and tied to the derivatives market that we all use just seems like a sensible innovation that that is long overdue.

David Greely (27m 37s):
Tom McMahon, Co-Founder, Abaxx Technologies.

Tom McMahon (27m 41s):
Gold has changed over time and as it has for me too. And I have been very fortunate enough in a number of the exchanges, obviously my experience on NYMEX and then COMEX, I was a director of, of NYMEX late eighties and early nineties and at that time the fortunes of COMEX had dropped significantly after gold's great run in the eighties. The markets for medals were significantly challenged on into the early nineties. And by that time, COMEX was looking for a savior and it was NYMEX and at that time the fortunes of NYMEX had changed dramatically because I can tell you in 1981, 82 NYMEX was almost bankrupt. It wasn't until 83 in the trading of oil that it changed its fortunes and 10 years on it was a much wealthier exchange in COMEX and in 1994 it allowed for NYMEX to acquire COMEX and that in and of itself was very interesting because now you had oil and gold tied together.

Tom McMahon (28m 38s):
And so you had a bit of a seamless trade within the same building initially when we still had floor trading activities and electronification subsequently to that, as NYMEX was acquired by the CME and it migrated onto GLOBEX, expanded significantly the role that gold played in terms of a tradable instrument within the commodities. So and now that opportunity is for Asia. The vision that Asia has for gold is very different than North America and different than Europe also too. It's culturally it's much more ingrained even down to the lowest in, I mean, you can track like country like Malaysia, 34 million citizens and the average holding per year of purchases of gold is 32 grams of gold every family.

David Greely (29m 24s):
And when thinking about the future, what do you see potentially as the role for gold and precious metals moving back to more of the mainstream of the financial system? And is that different between the more Western countries versus Asia?

Tom McMahon (29m 43s):
I think gold is going to play a much bigger role and actually the reason why it's gonna play a bigger role is because of the US dollar. Gold is a dollar hedge and the Asians know that, and the Europeans know that actually the Americans don't know that and we are Americans, so we can say that it's very interesting. Try to explain, and there are a lot of gold nuts in America. It's some really great people that I have known over the years. It's very difficult to try to explain. Americans don't realize that their currency depreciates 2% every year with intent that's built into the treasury, right? People like, no, I can still buy stuff with my dollars. That's okay. That's just

domestic bliss, right? And unless you travel outside the United States or do business outside the United States, you don't really realize the impact that it has. Gold is that hedge, right?

Tom McMahon (30m 27s):
I mean, for me, I have lived in Asia over 20 years now. I have owned gold the entire time and I've probably negated all of my dollar losses just by owning that metal. Just slow creep, just balances out, balances out, balances out. Asia starting to discover that, that if they want to de dollarize, they need, it's not Singapore dollar swapping re b it's sing dollar owning gold and using and Chinese owning gold and using gold as that bridge potentially as the hedge instrument as opposed to just swapping re dollars or rugby sing dollars or so gold is gonna pay more and more of a role and also too, it plays that security role. People always go, you know, in times of war, in times of strife, people have always gone to physical things, right? I mean diamonds in gold and stuff like that.

Tom McMahon (31m 13s):
And in people like, oh my god, yeah, but you can't carry a ton of gold with you when you, when you know when the world goes to hell in a hand basket. Well, you don't have to anymore. You've got secure vaulting systems and you've got electronic, you've got connectivity globally, right? Or in the case of Singapore, Singapore has built a vault over since 2012 efficiently. They're using LBMA good delivery standards and allowed for private businesses and for single family and multifamily offices and for international banks to build a portfolio of metal within the country. The next step is the unlocking process of how you can use that as a hedgeable instrument, right, as a collateral instrument. It's going to be very interesting

David Greely (31m 56s):
When you look out at the gold market and the greater role it could play in our financial system, the role it's increasingly playing in Asia. What do you see in terms of how the, the infrastructure of the gold market may need to change and evolve to be ready to play that greater role?

Tom McMahon (32m 16s):
I think it's got to be generational. I think gold has been stuck in probably three generations in the last a hundred years and, and again, if you look at America up to 32, 33, it had one idea of what gold was and then a gap of 40 years of no gold and now this the new metal and it's still not a mature vision where European vision on metal is, it's very conservative, it's very commercial and where Asia has got a very, very different working relationship with gold, it utilizes metal, as I said, industrially commercially as an investment for portfolios as a currency hedge, as a security hedge. So they treat gold very, very differently across all the different cultures. So no hesitancy of ownership in Asia, still a bit of an education in North America. Europeans are still going to be very conservative and think that interestingly Europeans think they own the gold market.

Tom McMahon (33m 09s):
That's a fact. I think it's changing it. It's really the Middle East and Asian markets that are gonna dominate metal in the next decade. Really the key is the generational shift. I think young people actually understand the value of something shiny as well as something that's digital. I can't get a 40-year-old to buy an ounce of gold, but I can get a 20-year-old to do it. If he can buy it with his ETH or Solana or with something like that, they'll say, yeah, yeah, yeah, want to own some of that, give me some of that and I can trade it. So we're seeing liquidity build in that generational shift also. And I think that that's gonna scale in time.

David Greely (33m 46s):
Albert Cheng, CEO, the Singapore Bullion Market Association.

Albert Cheng (33m 52s):
If we want to grow from a regional hub, what is the next area of growth that we need to look into? So we say let's compare with London. So we look at what we have and what London has and we compare and most of the function London has, we have except two things. One is we don't have a inventory of gold lie London, the SOS stay and institution investor store, their goal in London, the Bank of England have more than 8,000 times of gold and plus other custodian surface in London, there are close to 10,000 times of gold in, in London we don't have that. And secondly, we don't have a clearing system for gold like the local London price. So if we can achieve this two thing or build this out, build out this two thing into Singapore, we could actually become a another supplementary global hub in Asia.

Albert Cheng (34m 56s):
Because we look at the last 20 years that physical goal consume or being bought in Asia, in India and in China plus Southeast Asia together it account for at least 60 to 70% at some time of the total new gold production every year. But with the legacy and the settlement system everything need to be sector in London, which is fine when all trader are used to it and they have a formula to calculate the differences. But what if there is a Asia time zone hub in Singapore for in Asia hour for all the player in Asia to clear the goal within the same thing and if they have access goal, they do not need to send it back to London, they can send to Singapore. And if the two market is top to each other, it can be strong, it's fungible and it's safe and you reduce the carbon print.

David Greely (36m 04s):
There is this desire to integrate physical and digital gold markets. What do you see as the opportunity there and what do you see as the challenges?

Albert Cheng (36m 14s):
I think of course there is huge opportunity as the world is digitized in all aspects. And I think go market is one of the least developed market in terms of digitization. I think the reason for that is we, our transaction need to have physical goal. And the physical goal, not every single piece of it is digitized. I mean most of them because of its transient usage except the 400 ounce bar which is stored in London. Deep cold storage. The kilobyte is just in time used when a jewelry manufacturer to receive a kilowatt, they mail down in the meltdown to the jury. And investor may keep it for a longer time, but once you go out of the chain of custody, it has to be meltdown when they return to the system. So these are some inherent barrier of gold. So it also inherit, it also create barrier for digitization.

Albert Cheng (37m 11s):
So I think the financial market is all moving in that direction and the go market cannot resist. So we need to follow that trend. At the moment, we are not equipped ourselves enough to follow the trend. I think it might have to start with digitization in all your goals in storage at the moment. I mean we all understand that in London, at the Bank of England goal, they are all stored there for many years. And so they're all handwritten. I exaggerate. They are all handwritten backing of all the details and it, it's not digitized and it has issue in if you have to digitize every single piece of goal in London. But if we are able to start from a clean slate line, what you said, it can be piece by piece beginning the journey of digitization of goal, and it can start from here.

David Greely (38m 08s):
Looking back over these past 40 years and all the efforts that have led to this moment, why do you believe that now is the right moment for Singapore to emerge as a leading global center for the trading of gold and other precious metals?

Albert Cheng (38m 22s):
I think the external economy environment, the financial market jittery and the uncertainty make it infrastructural improvement in Singapore in order that we can capture this opportunity. And also to give the industry a tools, a tools that it might actually help them to build out more business opportunity in Asian country. And I mentioned Indonesia this year and eagerly, and at the same time, Vietnam government also has abolished a monopoly of gold tail bar making in the country, which is a big deal because they used to monopolize it with one company and in order to control the market and the government has come out and say, we like to abolish this and we like to gradually opening up the Vietnam market, which by itself is a important go market in US yet. So I think why now is if we are able to do something in terms of enhancing the infrastructure in Singapore for the go industry, it will help the industry to slip forward into the next stage. Asia, particularly in Southeast Asia, as I said, is the last frontier market is waiting for people to come and to explore this opportunity. And a lot of people is thinking of, if I am not there, I will miss out opportunity. And hence you see a good turnout of the APPMC this year. We also have a lot of people asking for membership because they want to be connected and they don't want to miss their business opportunity.

David Greely (40m 18s):
Ian Forester, Head of Product at Abaxx Technologies

Ian Forester (40m 23s):
I just don't know how a market can function as a truth sinking mechanism when it is surveilled top to bottom and all of its participants' actions can be predicted before they happen. I don't see how that market can function as a tool for discovery and I think that's where I think we're heading with all of this, or at least making a very honest effort to write that. I mean the most important thing, and this is why our, we have spent a long time with the Verifier Plus app, the most important thing is ensuring a solid connection between the

person and the act of signing. And we have this in the real world. The other thing is, none of this is new. We're simply doing our best to model in the digital space, what we already trust in the analog space. I have sort of an unofficial motto that I don't really share with people, but I'll tell you and our listeners, which is make the internet paper again, how do you take the secure and verifiable and provably scarce qualities of paper that have built so much of, and honestly data preservation.

Ian Forester (41m 37s):
I mean papers have been a great medium for preserving data over the centuries. How do you take those qualities and move them into digital space such that we can preserve those tenants of analog real world deal making in and among the dark forest of the internet. That's the challenge, those small feat, but that's the challenge that I think us and you know, everybody working in the space is really trying to tackle. So again, it goes back to how do you tie back to that person? How do you take the action of signing this thing that we do with our hands and put it in a digital space? And you know, I think 20 years ago there wasn't really an answer for this. These days though, we all have this incredibly secure, highly personalized, cryptographic signing device to our pockets. For us it's through the Verifier Plus app.

David Greely (42m 33s):
I would love to talk about how we use these to do real important commercial transactions. Ones where things are at stake. We have talked about digital identity, the ability to cryptographically sign a message, message and want to see how that kind of all comes together. And I know you've talked about your approach in terms of the four pillars of a transaction. Oh, some of you could walk us through those pillars.

Ian Forester (43m 02s):
We sort of have broken it down on four axes, which we are calling the four pillars of a transaction. And this is for any transaction, right? Sort of scales, but certainly gets more important as the stakes get higher. And those four pillars are secure identity. You have to be secure in who you are dealing with, right? You can't have a transaction with one person and then midway they switch to a different person. That doesn't work, right? You need to have a consistent, secure identity throughout the transaction. The intent has to be secure and the data has to be secure. And I'm sort of bunching these together because they are related. So transactions are all about intent at the time of transaction. You have to make sure that your, what you intend to happen is what's actually happening and what you're agreeing to is what you are actually agreeing to. And then your counterparty needs to make sure that whatever you have agreed to, and we have talked about this several times, you know, you can't just say like, oh well I didn't say that or I didn't sign that, or Oh, my assistant sign that because they had my DocuSign login or something, right? Like, so that intent has to be secure both during the transaction and after that and this is I think one of the biggest pieces because re-characterization and repudiation, if the system allows for those things, then it's not a useful system. Nobody can really rely on it, especially as the stakes get higher. So the tools that communicate that intent have to be secure, they can't be corrupted. And then this is where secure data comes into play. The, the record of that intent must be stored alongside the transaction and the transaction data and that data must also be secure. And then obviously you have to have a secure asset and that's where I think we can rely on. And you know, certainly many firms who are approaching this are relying on existing infrastructure, BNY, Mellon, you know, the sort of network of asset custodians and warehouses that currently exist. You have to be able to work with those systems, with those stakeholders. So that's the four axes. And then how do we sort of bring that all together so that each of those pillars can be secured by the signature so that that digital signature that we place so much on can function as the anchor, as the trust anchor for each of these four pillars. That's really how we're approaching this build out with our various tools and APIs and workflows.

David Greely (45m 48s):
Riley Hughes, Co-Founder and CEO at Trinsic

Riley Hughes (45m 52s):
Turns out there's a lot of hard problems, right? It's not for lack of trying, right? So there's a few things. I think in 20 6, 17, 18 timeframe, the sort of introduction of Web3 into the zeitgeist introduced people to this idea of that you could possess like a non-fungible thing on a device or whatever, right? Or at least you could possess like cryptographic keys that could be used to sign something that a counterparty could just trust. And this concept of a verifiable credential really became popularized around this timeframe where some trustworthy entity could sign verifiable credential and issue it to a wallet and the user could use it. And if you look today at the digital ID landscape, most digital IDs are not anchored to a Blockchain or based on Blockchain, but I don't think they would be here in nearly the level that they are if that sort of Web3 wave hadn't come. So I think that's a big element of it is it had to show the world that this is possible. And then once the world saw how this could be done, I think adoption has just been growing around the world ever since.

David Greely (46m 50s):
Think it's interesting too because for people sitting in the US, people would say, well I haven't used a digital ID, not that I really know of, or most people aren't that familiar. But as you said, in Europe and other countries, it's already much more integrated.

Riley Hughes (47m 09s):
Yeah. And like in the US, if you have clear, you've registered and been verified by clear, and now the TSA is accepting clears attestation of you. So if you have clear, you have used a digital id, if you've logged into the IRS with your ID me wallet and then later logged in to claim some benefit or re-log in next year to the IRS or whatever it is, like you've used a digital id. If you have TSA pre-check, you have used a digital ID if you have been verified on LinkedIn and then used that LinkedIn blue check mark to then apply for a job where the job, the hiring entity can see that trust that was established with LinkedIn, you've used a digital id, right? So I guess it's depends maybe on the definition here, but I think not all digital IDs look like a decentralized identity wallet maybe is my distinction. I'm, I'm making decentralized identity wallets will make that user experience much better and put consumers more in control of how they share their data and put privacy more at the forefront. But fundamentally it's the same thing. It's a attest station given by some entity and then accepted by another one.

David Greely (48m 03s):
That's really interesting. It's all kind of being built below the surface, at least from the user perspective it sounds. And you mentioned that one of the biggest challenges and part of why you founded Trinsic was this fragmentation, is that the biggest challenge you see out there to more widespread adoption appears that that second part of getting the individual user comfortable?

Riley Hughes (48m 24s):
I do think that that is the biggest challenge. I think fragmentation is the biggest challenge because consumers, if we have learned anything through the social media age and now the way that people are interacting with AI and whatever, if there is a little bit of value to it, then consumers will trade a whole lot of what maybe they would've been uncomfortable uses or something in exchange for a little bit of value. And I think if you can improve your life, do things more easily, get access to more services more quickly and more, more seamlessly, consumers could just create a unique username and password with unique password with every website they wanted to go to if they wanted ultimate privacy and security. But instead everybody logs in with Google because it's just a little bit more convenient. So I think if digital IDs are accepted more places, then consumers will over time pick up on it and start to use them. The challenge with acceptance is there are 18 different digital or different mobile driver's license wallets in the United States, for example and that's just the United States. That's for whatever, 24 different states that issue an MDL or something in 18 wallets. The fragmentation is really quite extreme, at least in the US and if you look globally as well. And so that I think is really the biggest barrier to acceptance

David Greely (05:09):
Carrie Jaquith, Global Head of Digital Product, Abaxx Technologies

Carrie Jaquith (49m 37s):
Adoptable comes up quite a lot and there are a couple ways to think about this. There is the, does it fit into my human physical behavior patterns? Is it going to force me to adopt a multi-step change that is going to dramatically slow me down? That is a very common adoption problem, especially on Wall Street where financial services never stop. The lights don't go off. So if you are bringing change into the environment, you really can't pull the car over on the side of the road and train people. It has to be trainable in flight. It has to be trainable and adoptable in fight and if it has to be pulled alongside, it can't be so disruptive that the real day-to-day work can't stop some of this risk of disruption. Remediation can be remediated by bringing in extra help for a period of time. And you will see that happen with different cycles of technology adoption where you'll see a, a net new team come onto your trading floor and sit alongside you while this migration is happening.

Carrie Jaquith (50m 55s):
Like that's a very common paradigm. And then there are sometimes failures to adopt where you can really attempt to force the change and the humans resisted and the team has to go back to the table and rethink their approach on how to deploy. I was thinking about a common learning that comes up when you are teaching students how to design products, data, products that sit on very large data sets. Every student goes through a very similar path. Step number one, they dump all of the data into a workspace and all of the data is visually overwhelming for the human. The human sees 10,000 rows of data, 10,000 columns of data and the humans who are asked to adopt and test this first version of every student's project immediately shut down and do not adopt the product, they immediately shut down. They're just like, this is too much.

Carrie Jaquith (52m 05s):
What every single student who is building those platforms realizes is they have to first set up the data, they have to provide a way for that data to be explored and audited, but they have to create a second layer and this second layer is the human interaction layer. This is the layer of interaction design where the humans are given the ability to see what action they should take and to question and audit if an action seems weird. So if an action, if a recommendation seems weird, they need a way to audit and I think about this through the lens of adoption. So any technology that is that 10,000 column, 10,000 row presentation will flatly not be adopted. It's too hard, it is too slow. You have to do the hard work of abstracting away and securing the information that's too much for the human brain and you need to give them the abstraction layer that is usable, trustable, usable.

David Greely (53m 16s):
And when you think about what's happened in recent years, do you think like a set of best practices has emerged when it comes to adopting new technologies?

Carrie Jaquith (53m 29s):
I think that you have to approach seismic changes by building bridges to them. It's very hard in institutional finance to turn the switch of a process completely off so that you can turn the switch of the new process on. Rather it's a much smoother transition for the humans and the machines to build in a way that is augmenting and is interoperable. That word interoperable is key. If you think about in the late s early teens, when Microsoft was required to open its code base, the European Union required that Microsoft made Microsoft office interoperable with open XML standards. And you may remember starting to see this little X at the end of your word, Excel and PowerPoint files. So instead of DOC for doc, it was Doc X. That change, that was a massive code-based change. And one of the ways it was made possible was interoperability.

Carrie Jaquith (54m 39s):
You could open that file on either machine, you could open either type of file and it would feel fairly similar. It was not under the hood. The guts of the code was not similar and what no one saw in the front of the house or in the user side of the house. No one saw the deep, deep work that was happening behind the scenes to transition from one code base, from a binary code base to an open XML code base. But it was made possible by the bridge of being able to open both types of files until that older type of file could be deprecated. That paradigm of helping industry maintain stability and operability by providing interoperability for periods of transition, that's such a powerful tool to bringing change into live work streams that really can't shut the lights off.

David Greely (55m 36s):
Leah Wald, Digital Title Lead, Abaxx Technologies

Leah Wald (55m 42s):
Tokenization, as mentioned as powerful as it is, does have a fundamental limitation. Most tokenized structures leave holders as unsecured creditors on the issuing platform. So the token is a representation of ownership recorded elsewhere and in an insolvency scenario that token provides no perfected claim to the underlying asset. At Abaxx, we call that the insolvency gap, and it's the core reason we believe institutional adoption has stalled today. That plus maybe the reporting requirements. So digital title does just take a completely different approach, really looking at determinism as well as legal finality. So the digital title certificate isn't the representation of ownership, we say it is the legal instrument itself, and that's constituting the documented title under the MLETR standards. So if your record keeper fails, your ownership claim is directly with the custodian and no intermediary solvency can break that. And that's just a huge innovation.

Leah Wald (56m 45s):
I would also say, and it's important to point out where Abaxx's ID ++ protocol becomes essential differentiator too. So digital title works because it is built on the verified identity infrastructure and tokens are fair instruments. So whoever holds the private keys owns the asset. Who's the keys? Who's the asset? No recourse, not good. Digital title certificates though are registered instruments, so bound to verified legal identities through ID++ huge. So if credentials are compromised, identity can be reestablished through the standard corporate legal processes. So comfort when you go to bed. So that privacy identity layer is what makes the legal architecture really enforceable. So we're not wrapping assets and tokens, we are creating a new foundation of how ownership transfers, and that's one that tokenization is trying to solve. But through legal finality rather than digital representation is how we're going after it. And I will just say that's where I think the elegance of digital title also is crucial to understand. It just needs to do one thing, establish who owns what

with cryptographic proof and legal enforceability, everything else, the speed, the programmability, the instant collateral mobilization that flows from that foundation. But it's an elegant solution.

David Greely (58m 09):
And I know internally at Abaxx you have been collaborating quite a bit with the technology and the clearing teams as part of these pilots. I was wondering if you could walk us through a little bit to the extent that it's appropriate, what actually happens step by step when a security like a money market fund is transferred using digital title and how is that different from how a transfer works today?

Leah Wald (58m 36s):
That's a great question. I will be sure to spell all the secret sauce too now. So let's paint the picture of the current system first, and maybe you'll chime in with some fun stories as well, just how much doesn't work still in traditional finance, but additional finance. But I think most people don't realize how much is happening behind the scenes. So let's use an extreme example that we are trying to solve through. You get a margin call at 6:00 AM the bank opens at nine simple happens all the time. And that's three hours when you're exposed with no solution. Once operations begin, transfer touch is your custodian, maybe a tri-party agent, possibly a collateral mobility platform. Then the clearinghouse and each layer is taking a cut. So from our research, it's about 12 to 15 BIPS stacked when all is said and done, just for that process, as we know, settlements, T + 1 at best, let not even talk about international wire transfers failing or taking multiple days, right?

Leah Wald (59m 32s):
And then you have multiple databases to reconcile and if anything is off, you are into fail resolution. So now you are in trouble even further and meanwhile, and the big one is you're holding about three to 5% buffer capital just to survive these different timings. So consider that sit and wait and wish and right and trillions of dollars are just trapped in this process at any given moment. So it works, it does, but it's expensive friction that everyone has just accepted as the cost of doing business and we know that you shouldn't. And what excites me about digital title is how it rethinks the problem from those first principles. So rather than trying to make the existing pipes move faster, it asks, well, what if ownership itself could transfer with legal finality instantly without the underlying asset ever moving? Right and that's the core insight. So in the money market fund pilot, the assets stayed with the original holders custodian, what transferred was the ownership itself, not a security interest requiring perfection, but direct ownership via the digital title certificate huge.

Leah Wald (60m 42s):
And that transfer happened immediately with cryptographic proof and legal enforceability. So one authoritative record with an audit trail and here is what I find really elegant of the flow, is that the original holder in the pilot was able to continue earning yield on the asset even while it's serving as collateral and we call that the living collateral. So same economic outcome as the traditional process, but without the intermediary stack, without the time and gaps and without the trapped capital. So again, I think it just takes back to those learning lessons where we are not trying to ask anyone to rip out their existing infrastructure. It's designed to work with standard documentation, existing custody relationships. It's really integration, not replacement, but with a way better system.

David Greely (61m 35s):
Walt Lukken, President & CEO, FIA

Walt Lukken (61m 40s):
So if we can get this right, then you can start to move money faster, you can de-risk the system faster, getting to T0 and getting money in the right account faster. So those are all things that we have been working on, but we didn't have the ability because of the public payment rails to achieve those. And we had to do workarounds as a result of this. But this fundamentally changes the game. So if you can move value any time of the day to de-risk the system, we can start to think more broadly and also start to grow the industry. The ability to do that. If there is less risk in the system, it means that there's more capacity in the system to take on new trading. For us, it's not just a helping to make sure the markets are safe and sound, that's incredibly important, but it also provides greater capacity for the industry to grow and this is a great news story for us.

David Greely (62m 43s):
And this summer you released an FIA white paper titled Accelerating the Velocity of Collateral, the potential for Tokenization and Clear Derivatives Markets. And I wanted to ask you, why is improving the movement of collateral so important and what are the major benefits of tokenization for the movement of collateral?

Walt Lukken (63 m 08s):
Our clearing system is based on the fundamental premise that clearing houses manage the counterparty risk of all its market participants, but that requires us to back trades by collateral. And we have been doing that for many, many years. That actually was one of the lessons of, of the financial crisis, is our markets worked when others didn't, and it was clearing that was at the central aspect of why our markets worked. So this is trying to improve that clearing system even more by allowing the de-risking real time of trades. So as trades happen, we can collect from customers quickly, submit that to clearing houses, and that just takes risk out of the system as it is happening. What we saw in the financial crisis was risk building up. No one knew where it was, they couldn't see it until catastrophic results occurred. So clearing allows us to be very transparent, to move risk quickly, and by modernizing through tokenization the back office systems, it's really gonna help us to do this even more in real time.

David Greely (64m 17s):
And have you heard any arguments for the risks this could pose to clearing if it's not implemented well.

Walt Lukken (64m 25s):
No, absolutely. And I don't want to overstate how close we are to implementing this. It still is a promise, not necessarily in practice. And part of it is the word stable coin, how stable is it? And so there have been points of time in the past where dollar stable coin was not worth a dollar and so how do we ensure that when you need cash, and that's really what in a default situation, if you re converting stable coins into cash, or if the stable coin itself is the end cash unit, is it going to be stable? Is it going to be a dollar? And right now, dollars are the reserve currency of the world because they do retain value. They are the riskless collateral that the world utilizes. But will stable coins take their place? And I think the Genius Act was passed in the United States. It has to be implemented to ensure that indeed there is dollar for dollar reserves that those reserves can be accessed quickly. There is accounting of those reserves by regulators and so that is super important to get implemented. And once we have that in place, people start to utilize this more, there is going to be more reliance on this. So we don't actually see this as a wholesale change happening very quickly, but something that starts to get implemented transitionally over time as people get more comfortable with it.

David Greely (21m 29s):
And how big of a challenge is it in that trying to bring change to a, an industry with global participants, but with exchanges and clearing houses that are locally regulated, it would seem like you might have a bit of an all or nothing, right? If one jurisdiction approves it, but others don't, it could make it difficult in a global environment. How do you think about that? Maybe with your former acting chair of the CFTC hat on

Walt Lukken (66m 26s):
Even our paper, we try to go to first principles of how this should look and what types of regulations should be a part of, of this project. But I think international standard setting is important. So IOSCO can be helpful in ensuring that the principles of how tokenized assets should move forward, they can help to set those principles and how regulators approach it. But I do think right now the markets are moving so fast, the CFTC has been very aggressive in providing guidance and encouraging the use of these tokenized assets. I think Europe and Asia have been a bit more cautious about it, but like anything in the world, competition drives change. And so other regulators that see one regulator moving forward, they can either move forward with them or decide not to, but that may come at a cost. And so I think regulators, there is, this is certainly not a race to the bottom because I think this is a blank piece of paper. I think regulators are trying to figure out what is the smart regulation, the right regulation of these products, but allowing these tokens to, I think the US moving into this space is likely to cause Europeans and Asians to move faster into this space and to try to sort of keep pace with allowing these assets going forward.

David Greely (67m 56s):
Josh Crumb, Founder and CEO at Abaxx Technologies

Josh Crumb (68m 00s):
Stepping back at its simplest, I like to say in the early crypto markets, when the asset lives in the ledger, the ledger reconciliation is what matters. When the asset lives in the law, it's the legal reconciliation that matters. So diving into that phrase again, what does that mean? So really the revolutionary technology of Nakamoto consensus, what we know as Bitcoin and the Bitcoin Blockchain, you know, was really, really the, the fundamental technology here of what some might call triple ledger entry accounting, right? Like, so we've always had this double entry accounting since the time of the Meta sheet or whatever it is, the assets and liabilities. But what

Blockchain really did is by creating that incentive system and that proof of work token that lived in the ledger allowed an incentive mechanism for that ledger to be reconciled all over the place without a central counter party.

Josh Crumb (68m 57s):
And then Ethereum and Solana and a number of these Blockchains have taken it to the next level with proof of stake. But again, the asset itself and the consensus mechanism and incentives are an asset that lives in the ledger. So for 10, 15 years, we have been very focused on how fast and what's the finality of, of settling this ledger. But again, the problem is in securities, the asset lives in the law, it doesn't live in the ledger. So at best what we have seen is these ledgers that are, again, multi parties can reconcile them in real time, which is great, but at they ultimately are just pointing offline to a legal system somewhere else. So assets, securities, commodities, the rights entitled to commodities. These all live in the law and these all live offline, so it's very hard to reconcile that natively into the ledger. That was the problem that we've been working to solve is not just reconciling the ledger, but multi-party reconciliation of legal claims that also can give that, again, that machine readability, that machine verification that can speed up commerce and speed up trust in the system.

David Greely (70m 03s):
Whether it's the futures contracts that you re launching through Abaxx Exchange or the products you are developing at Abaxx Technologies, you are always focused on meeting the commercial needs of the market. You're always very intentional in making that first. So I wanted to ask you, what's the commercial need for tokenization that you are trying to meet right now?

Josh Crumb (70m 26s):
Absolutely and look, this series that that we go through will probably get into, into the weeds sometimes of how the watch is made. But we like the old adage, people don't care how the map watch is made, they just want to know the time. That said, I think it is important sometimes when you have new technology to understand a little bit the how and the why, but focusing on the why we come down to the movement of collateral, particularly when you are talking about futures exchange and the collateral that's needed in this market. The global clear derivatives industry is sitting on somewhere in the order of magnitude of a trillion dollars in assets as collateral initial margin and the variation margins as markets move, but that collateral is still predominantly moved in very slow settlement systems. Sure, the trade can happen in, you know, fractions of a millisecond, but the actual clearing and, and the movement of collateral in the settlement still takes many days, particularly if we are talking about international commodity markets.

Josh Crumb (71m 27s):
So that's really the use case. And particularly if you are looking at our markets, which are really centered from a physical and supply and demand side, is really looking at Asia, and I am using very rough numbers here, but say something like 70% of the world's commodity trade happens in Asia, but at the end of the day, the financing is still predominantly in the US and London. And why is that? That's where the dollars are, that's where the collateral is and so if we can free that collateral to be as mobile and at center of gravity, move closer to Asia, we think that that just opens up more financial infrastructure, more flow of goods, more markets. So that's why institutions, and that's why Abaxx and our clients are really focused on the secure and real-time movement of collateral, particularly out in Asia.

David Greely (72m 13s):
Thanks again to all of our guests this year on SmarterMarkets, and thank you to my colleagues who bring this podcast to you each week. Tara Hayes, Derin Turner, Michael Sokol, Carlos Flores, and Louise Kean. We hope you enjoyed our 2025 Holiday Special, the year in review. From all of us at SmarterMarkets, we wish you a happy New Year and all the best to your friends and family. We will be back next week to kick off a new year on SmarterMarkets. We hope you will join us.

Announcer (72m 48s):
This episode is brought to you in part by Abaxx Exchange, bringing better price discovery and risk management tools to navigate today's commodities markets through centrally cleared, physically deliverable futures contracts in energy, environmental, battery materials, and precious metals markets. Smarter Markets are here. Contact sales@abaxx.exchange to get started.
That concludes this week's episode of SmarterMarkets by Abaxx. For episode transcripts and additional episode information, including research, editorial and video content, please visit smartermarkets.media. Please help more people discover the podcast by leaving a review on Apple Podcast, Spotify, YouTube, or your favorite podcast platform. SmarterMarkets is presented for informational and entertainment purposes only. The information presented on SmarterMarkets should not be construed as investment advice. Always consult a licensed investment professional before making investment decisions. The views and opinions expressed on SmarterMarkets

are those of the participants and do not necessarily reflect those of the show's hosts or producer. SmarterMarkets, its hosts, guests, employees, and producer, Abaxx Technologies, shall not be held liable for losses resulting from investment decisions based on informational viewpoints presented on SmarterMarkets. Thank you for listening and please join us again next week.