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### Introducing SmarterMarkets | Episode 2

#### Maryam Ayati, CEO of NEO Holdings

**We sit down with energy industry maverick and market innovator, Maryam Ayati, who leads NEO Holdings. Maryam doubles down on Robert Friedland's vision of grading and trading commodities based on ESG aspects but describes it as a first step in a transformational but rapid redesign of commodity supply chains, financing, and pricing. She describes how the entire commodity supply chain could be tokenized using stable tokens and distributed ledger technology - and how commodities could literally be traced to their source with the journey to end-user captured in almost perpetuity using new data tech which applies molecular-level digital fingerprints to almost any commodity.**

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**Announcer:** [00:00:00]

Welcome to Smarter Markets, a free weekly podcast, featuring stories from the entrepreneurs and icons of commodities, capital markets, and technology. Ranting on the inadequacies of our systems and riffing on ideas for how to solve them. Together, we explore the question: Is capitalism in crisis? And will building Smarter Markets be the antidote?

And now here's your host, Erik Townsend.

**Erik Townsend:** [00:00:29]

Welcome to the second episode of Smarter Markets, a weekly podcast that explores how financial markets could be redesigned and improved to better serve both market participants and society as a whole. Smarter Markets is made possible by a grant from Abaxx Technologies. I'm your host, Erik Townsend.

In the first episode, billionaire financier and veteran mining executive Robert Friedland shared his vision for smarter commodity markets.

Robert explained that commodities are already graded and traded according to their physical properties. As evidenced by the many grades of crude oil ranging from heavy sour to light sweet. Robert envisions, Smarter Markets, which grade commodities, not only on their physical properties, but also on how responsibly they were produced.

His vision would allow a responsible copper miner who embraces ESG values of the production process to be rewarded by the opportunity to sell green copper at a premium price. Where that premium is determined by free market price discovery after buyers are given the option to source green copper, that meets certain ESG production requirements.

I thought that was a terrific idea, but I wondered how such a system could actually work. Sure, distributed ledger technology could allow digital tokens to represent bulk copper and other commodities and trace ESG properties through the entire production process. But how would a buyer know for sure that the copper they were buying is really the same copper that the digital token was tracking? And is a fully tokenized commodity market really something the world is ready for?

This week's guest is Maryam Ayati. She's going to address those questions directly in this podcast. Maryam spent more than a decade as an executive at Royal Dutch Shell, where she created a number of organizations, including Shell trading's origination and investments practice across global crude oil and products and pioneering the LNG to downstream and marine concepts for the company.

In private equity settings, Maryam has led at scale deployment of clean technology, including the world's first downstream, liquified natural gas value chains to replace diesel and fuel oil.

Today she's co-founder and CEO of NEO Holdings, which brings established energy industry giants together with the climate and entrepreneurial ecosystem where they jointly identify and operationalise new business models to align the interests of extractive industries with the priorities of planet, people and profit. We'll start with Maryam's reactions to hearing Robert Friedland's interview last week, and then delve into what it would actually take to realize Robert's vision and how ready the marketplace is for change on

that scale.

My interview with Neo co-founder and CEO, Maryam Ayati is coming up next.

**Announcer:** [00:03:24]

And now with this week's special guest, here's your host, Erik Townsend.

**Erik Townsend:** [00:03:30]

Maryam, it's great to have you on the program. I want to start with...and I'm sorry to put you in this position because after Robert Friedland gave us his story last week of a camel named Hugo and playing camel polo in the snow and outer Mongolia... I guess you're supposed to try and top that story? I'm not sure what the plan is here, but we're trying to start with a good story from your career. So, what would you say to try to compete with Robert's story?

**Maryam Ayati:** [00:04:00]

Well, I'm going to totally dodge that question and establish that having a favorite story is, is sort of representative of a dull life. And anything I can share with you to live in perpetuity on the web is going to be even more boring. So, I won't try to top Robert just couldn't even try. I think I do want to bring a couple of touch points that mattered to me as I stand here and have a chat with you on energy and its future. And forgive me a bit, become sentimental as a starting point, but it matters to me and it forms my point of view.

You know, I grew up in Iran and my mother was, uh, **is** a very fierce feminist educator. And when I joined the oil industry, many years later in London with Shell, she sat me down and gave me one of the harshest talking to she ever has, telling me the story of growing up as a little girl in Iran with an Anglo-Persian oil company and the allocation of space and resources to expatriates versus local people.

And the parts of the Caspian, which is our beautiful coast being allocated to... Persians weren't allowed. The Iranians weren't allowed. There were walls that said it was for staff only, et cetera. And how could I possibly go into a world that perpetuates that outcome? And for my mom, this was a deeply personal and an important message to impart on me. And for me, having spent at that point multiple years across the former Soviet Union, traveling around and doing lots of work and also having seen a bit of Africa and understanding the inequality that followed the centralized version of developing supply chains, has been truly fundamental in the way I approach my work.

And so I put this here. It is more boring than having an albino camel... I looked one up after I heard Robert's. But it's for me an important point to drive home on how I look at the world and how many, many hundreds of millions of humans around the world to interact with the output of our work, look at the world and how might we engage with them in a conversation that designs a different future.

**Erik Townsend:** [00:06:43]

Let's move on to the vision that Robert shared with us in last week's first episode of this podcast, where he described as a copper producer and a producer of other raw materials. Robert wants to be able to sell his copper into a market where the market itself is designed to grade him and hold him accountable as to how that copper was produced in terms of respecting ESG priorities. Whether child labor was exploited, whether the environment was exploited in the production of that copper and allow free market price discovery to reward him and other responsible producers for doing it right.

Now, you are a veteran of commodity markets and the design of the markets themselves, as well as having worked for more than a decade in the oil industry. What did you think when you heard that? Does that sound to you like something that is doable? And what challenges would you foresee in terms of implementing that vision that Robert described?

**Maryam Ayati:** [00:07:46]

I think what Robert described is inevitable, but it's only a stepping stone to a much more rapid redesign of the total system. So if I can take a few steps back and, just look at a very high level, the last hundred years and the way we've interacted with energy and extractives, as they bring to us the various resources and the electricity we need to live the lives we want and the lifestyle that we desired. So, initially that there were no consequences. There was no transparency. Frankly, no one really seemed to care. And the supply chain was gray and opaque, as long as the magic of electricity, cooling, refrigeration, heating, all of that was reaching the world

starved for it. Over time, of course we learned through actually consequences of being nationalized as an industry or a really being demonized as an industry that corporate social responsibility needed to be taken seriously and it became as sort of a proxy add-on from building schools and hospitals and trying to do the right thing at minimum cost without disturbing the supply chain and disturbing profitability. And so this concept of CSR was born, but it was still opaque and it was really at a national level.

So if you were getting your oil out of Nigeria or out of Iran, then you worried about tackling those things so the government doesn't get upset. Over time, the environmental footprint of what we do has come to the fore and that's also coincided with a much more engaged global population that can now start to see and talk a little bit, you know, whether they have all the right information or not is a whole other debate that I'm sure we'll get into. But there's a much broader group of stakeholders, buyers, sellers, governments, NOC's, governing bodies and regulators, who now have an opinion on what the environmental footprint of our activities should be. Both in the extractive industries, including energy and mining, et cetera and in the way they are consumed, once they land wherever they're going to be consumed.

So we invented offsets and it's a beautiful approximation of, yes perhaps bad things are happening here, but if we do enough good things over here and you bundle them together, that's a great outcome.

And at least it aims to get us closer to neutral. And of course offsets, when we're tackling carbon offsets, are increasingly working to incorporate other SDGs and bring in some of that social impact into it as well. But it's still a disconnected model and it's a, it's a model that needs to be matured.

And I think Robert touched very eloquently on a lot of that. Is it a carrot or stick model that matures it? And there are many examples of various fund managers, asset managers, using decisions around sustainable investing strategies to also drive capital one way or another. As well as regulators and the UN pushing a certain outcome.

But in my mind, and in the world I see, being somewhat immersed on the flip side, is not everything is going to develop as a continuation of the past. And whilst we in our world of extractives and commodity trading and, market making are trying to build stairs from the past, because that's where our advantage lies.

There's a whole world of people really coming at it from a completely different starting point and building a new economy version of this that probably will do its very best to compete with offsets and bundling, et cetera. And embody all of the attributes, whether it's social, whether it's SDGs, whether it's environmental, whether it's the footprint. Whether it's, you know, this specific commodity is virgin or recycled, whether it comes from a country where people don't want to support some policy that government has, or it comes from a country, that's seem to be embodying more of the universal values that people want to support. All of that will be priced into and tokenized into a singular representation of the resources we consume, by, sell, et cetera.

**Erik Townsend:** [00:13:04]

Now Robert's vision involved, tokenizing commodities so that you could use distributed ledger technology, the same technology that underlies the cryptocurrency systems to create an immutable record of the history of production of these commodities. And basically allow people to keep the producers honest on these ESG objectives.

Robert is a very forward-thinking, leading edge kind of mind. Do you think the industry in general is ready for something like that? Do you think people would get it and say, yeah, we want this. Or would there be more of a, "What? Distributed blockchain? Huh? How does that fit? We don't get it."

**Maryam Ayati:** [00:13:47]

I think the industry is far more advanced than we might give them credit for. I think about three years ago, I sat in a room with 16 of my peers across every commodity trading house and some of the other majors alongside Shell with obviously our antitrust lawyers next to us, and with many, many compliance folks next to us. Talking about how might we take the non-commercial operational aspects of our trading business, crude trading, to a blockchain platform that allows us to avoid fraud. Allows us to become much more transparent and auditable to any regulator interested in having a look and also to allow us to eliminate an incredible amount of human error and backroom in going digital and going on a blockchain.

And so if in 2017, We were able to have that conversation across the major commodity houses and that led to the creation of what is now backed with most of the most of the North sea crude traders around the table as investors or users of the platform. Then of

course the industry is ready and of course the industry understands how we might use blockchain technology as a proxy for trust. And that's a really important thing because we don't trust one another and we have no intention of trusting one another we're competitors. We are fiercely competitive in the commercial space.

And so the future lies in the ability to create space to do the things that data and digital require of us in a system where trust is replaced by the ability to verify and ensure an immutable version of the truth. So, yeah, the, one of the world's first enterprise grade blockchain platforms was launched to 67% of the Brent trading market using it in 2019.

So, of course we're ready. And of course we understand that dilemma is how much of our time and energy and resources are we going to use to create a digital replica of what we do today, which in many ways is, I think shortsighted and uninformed. Versus having a much broader look at what is possible. What is the crypto world making possible?

And I'm not talking about Bitcoin. I'm genuinely talking about a recreation, a digital identity for all of the activities and nodes and resources that we consume touch or undertake today. That's not farfetched. That's easy. It's being done. And it's being done at the billions of dollars scale. They're just not always in our sphere of understanding or knowledge.

So how might we take that lens of the future and build *back* from a view that's more informed by what is possible and less constrained, but what by what has always been done?

**Erik Townsend:** [00:17:23]

I want to go back to something you said earlier, Maryam, when I asked you about the vision that Robert described, which probably sounded groundbreaking to most of our listeners when they heard it. Your reaction was almost, I don't want to put these words in your mouth, but you were almost, I said, it's a good first step, but it's just the beginning of getting to a bigger vision that you have. Share with us, that bigger vision. Where is this ultimately headed?

**Maryam Ayati:** [00:17:51]

Sure. I want to tell you a story if I may to set the scene. Right? So when I talk to activists and environmentalists and people in the crypto space and people in the decentralized finance space. All of which are immense, immense economies of their own. Right? When I talk to them, our version of the world is incredibly old school because they have already created and curated many of the common underlying protocols, many of the common underlying technology and assets that allow us to create a digital identity for every node, like I mentioned. They are already in the middle of a land grab for the reserves and assets, the governance models, the protocols that will be the fundamental foundation layers of this new economy. And they're doing it while the rest of the world is looking back to a hundred years ago and saying, well, the way we centralized everything, the way we brought stuff from Africa to Europe to fuel prosperity, the way we burnt coal to light up European and American cities. That didn't work out. Let's figure out how we bundle that with good activities where in fact, there's a real need to look at it from a clean slate and take what is possible today, their reserves and assets that are available today, in a data economy and understand how instead of bundling all of that activity that origin to consumption narrative can be incorporated into a single identity token, which is transparent.

Now imagine that level of transparency and what it does to an economic market, what it does, search traded market. That ability to see as a consumer, as a buyer, as a seller and as someone who's playing in between to be able to see all of that history and let the market decide what it's worth.

You know, I have a good friend in Singapore whose organization is working very hard to put a price on every SDG sustainable development goal that the UN has created by looking at the way the markets have valued, the voluntary markets, have valued various offsets and how they've been associated with either of those in the past. It won't be long before we can price that into the value of a single commodity.

And so I could, very soon, be able to buy a piece of metal if I were in the business of building things, whether it's the Teslas that Robert was talking about or whether it's a home and I, as a consumer, want to decide what materials are used in my home. I could very easily see the provenance, the journey it's been on, whether it's being used for the first time or whether it's been recycled and is part of a urban regeneration process of bringing recycled metals back. Or whether it's come from a country whose policies I agree with and whether

its supply chain is one, I find compatible with my values. And just by buying that token, either in a peer to peer exchange or an, a B2C or B2B exchange, I'm suddenly monetizing all of that. I'm putting a value on it. I'm showing the market I care about that. And I'm going to put my money where my mouth is. And you might say people won't care and perhaps they won't, although the activism of today would suggest that they do.

But even if they don't, the system will care because we are seeing ESG be priced into, be rewarded into, the sort of financial mechanisms in the market, in the regulatory mechanisms, in the markets and in the compliance mechanisms in the market. If you could put all of that in a single digital representation of a resource that I use as an individual, as a business or as a city, that market is a fundamentally different one than one that has a traditional supply chain. And I link it with the acquisition of a piece of paper that says my work pays for trees being planted somewhere. Does that translate?

**Erik Townsend:** [00:23:11]

Maryam that translates for me. But what I'd like to ask you about next is how it's going to translate for, let's say the laggard side of the industry. You're talking about some leading edge, some people would say bleeding edge, technology using distributed ledgers to tokenize all of the different assets that exist in the supply chain. So that every lot of copper or, or crop of wheat or whatever can be electronically transacted in a digital ledger based e-commerce system. Let's face it. Commodity trading is a business that until very recently was made up by a bunch of screaming, ex athletes, trying to push each other out of the way so they could scream louder and get the attention of the guy on the other side of the open outcry pit.

How ready is the industry to adopt the kind of change that you're talking about? Because this is pretty fancy stuff.

**Maryam Ayati:** [00:24:13]

I guess the question is, can it afford not to. Because you know, when the Rockefellers were going around or the Shells of this world or the BPs of this world, we're going around a hundred years ago, acquiring the reserves that laid foundation to a century of wealth and progress and innovation, whether it's from the automobile or the fact that you and I can now have this conversation across oceans, seamlessly through the internet and the electricity provided by fossil fuels. No one there governed them truly. And no one really understood the consequences whilst it was happening.

So no one understood the consequences when that land grab was happening. And when all of the systems were being put into place to govern it to make sure it delivers and overtime to make sure it's equitable and has a decent footprint. So can the commodities world ignore the fact that there's a bunch of very smart kids and grownups sitting in offices in places far away from Nigeria or, some of the places where we went as an industry to acquire those reserves and they are laying the common protocols of a future that looks very much like I described.

And if the answer is, yes, we'll ignore it. Great. There's immense opportunity to continue to iterate in the status quo until it becomes irrelevant. But there's a farther and much more impressive opportunity today to really bring to the table the resources, the footprint, the learnings, and the collective wisdom of the energy and commodities industry as our world navigates, understands and tries to design this next system.

The greatest opportunity lost will be to sit back as an industry that has gone through so many years of learning from, you know, athletes to dudes and ladies shouting at screens to people sitting somewhat civilized and carefully regulated in nice offices all around the world.

But that maturity has come with significant lessons learned and it comes with infrastructure, distribution channels, and then understanding of taking a resource and bringing it to where it needs to be utilized. And how it must be governed to have better outcomes than we had at the onset of the fossil fuel industry and the extractive industry.

So those learnings and those resources and those assets and distribution channels warrant a really critical seat at the table with the data scientists, with the environmentalist, with the tech giants who are sitting in front of our legislators and lawmakers, arguing and debating the compliance and governance framework that will govern how we do this business.

As soon as it flips to a tokenized version, which is very much will, and we're not there, we're not at that table. We're not learning from



them. We're having conversations in a closed system. We're talking to all the same usual suspects who taught us how to go from A to B. And they'll talk to us about how we might go from B to C, but we have to, we haven't created an opening to genuinely let all of the viewpoints and let all of the expertise and co create a future that is much more sustainable. But also much more realistic. And much more informed by what technology, digitalization, tokenization, and transparency will enable and will bring to life.

**Erik Townsend:** [00:28:46]

Let's talk some more about some of the benefits of a tokenized commodity trading system.

When Robert Friedland described this last week, his vision really was basically described as look, if you give him and other miners, a financial incentive to embrace ESG values and be more responsible about the way they produce their copper, and you give them a market which allows transparency so that they can market their copper as green copper, well, that creates a self-reinforcing feedback loop where ESG objectives are met because the market wants them to be met. And because the producers are rewarded for meeting them, so the benefit to the producers is a financial incentive. And the benefit to consumers is the visibility and the opportunity to see whether or not they're buying something that was responsibly produced.

What are some of the other benefits that you see to a tokenized, commodity trading infrastructure to replace the futures markets that we have today?

**Maryam Ayati:** [00:29:49]

Erik, I think the thing I keep going back to when I think about this opportunity and this dilemma and the first steps of incentivizing the right behavior upstream. There's also a whole incentive mechanism that comes into place, when we talk about, you know, the crypto and the tokenized version of the world, that is about elimination of waste and its direct link to prosperity. And I know that sounds potentially fluffy, but it's incredibly important to remember how much of the energy we need to fuel the global growth forecasted is wasted today.

And so the ability to eliminate waste in our ecosystem is an incredibly powerful source of new energy. And we talk about incentivizing the upstream in all forms, whether it's mining, extractives, fossil fuels and augmenting solar augmenting wind with the right battery technology to store them, et cetera.

There's also a much more readily available opportunity, which is the elimination of waste. And the elimination of waste, I want to talk about in terms of an individual, a city, as societies, footprint, and resource intensity of that footprint from, you know, a day to day series of activities and how that might transition to a far less resource intensive one. If all of these activities were priced. And it's an inevitable outcome. Once you put a price on waste through this footprint analysis and origin tracking that we just discussed, then I as a consumer will be directly incentivized to turn off my light. To do my laundry at a certain time. To get rid of my 5.7 V8. And to do the things it takes to actually lower that bill. If I care... and many people won't. But then the city and the governance models on top of that will care. And we can work in ways to manage that and manage resource allocation in a much smarter and sharper way, which will send the right signals to the market.

Because if repeatedly, the city of Los Angeles decides to really put in all of its RFPs and all of its acquisition of power, or even waste management or construction, various metrics that require an understanding of the origin and the supply chain of the materials and resources brought in, the markets will value that. The markets will value it all across the supply chain. And much of that, the wasteful cheapest stuff will start to disappear and will save resources in a very different way than we have before.

The other thing that I think will be really interesting to watch is how the developing world and the economic South embark on their own version, on their own path to prosperity as the natural resources we've taken for granted in the in the developed world, become more and more something that enables their growth and their prosperity. Whether they will go down the path of a more wasteful version of it like the UK or the US, or whether they'll take a more Japanese model where GDP growth per capita doesn't coincide with that same spike in wastefulness and footprints per capita.

And so as Africa, as China, as India decides how to proceed to prosperity, having already leapfrogged, brick and mortar in so many of its activities and processes, all of it will be priced in. All of it will be priced in and the markets will be able to see that live and react to it in a way that's much more immediate than signaling for corporate social responsibility or signaling for more forests to be planted.

Both of which need to be done, but this will be a much more immediate and transparent feedback loop. I mean, imagine being able to drive into a gas station and scanning to see the footprint and the legacy of the molecule, you're able to put into your car. Now, you might not care, but clearly all the guys and girls who get on airplanes, and I appreciate the irony, get on airplanes to go protest in front of hydrocarbon and extractive industries, would.

And that's a huge portion of the population who would then be able to scan at a moment and see the footprint of the things that are about to pay for. Would you drive across the street to a different gas station where the supply chain gives you a cleaner fuel?

I would dare to say, yes. Will, the market value that? Absolutely. That's why we're seeing organizations like BP under Bernard Looney's leadership, talk about reinventing a fundamentally different way of interacting with their supply chains and with society. Why Shell has done the same thing. Why so many of the of the giants who bring these molecules to life, understand, and fundamentally are engaged in a different supply chain. Because it is becoming transparent. Because it is becoming valued. Because it's the right thing to do. But it's also the most profitable thing to do.

**Erik Townsend:** [00:36:16]

Maryam, I'm sure that a lot of our listeners are probably thinking, wait a minute, you guys are talking about tokens and distributed ledgers and replacing the way commodity markets work.

I bet there's a lot of listeners who have a vested interest in the old system because they do business with it every day. Wh. Needs to have a say in how all this stuff gets designed and how are they going to have that say? How do you envision this working so that the stakeholders in the industry get their interests represented.

If we're talking about designing new markets, the people that are using the current markets, I think reasonably have a say in how that should happen. How do they get their chance to have their voice heard?

**Maryam Ayati:** [00:37:01]

Thanks for putting that on the table, Erik. I think it's really the heart of what I spend most of my time thinking about and doing with many, many smart people around the world, because most many of us and many of established industry rightly, as you say, are building forward from the past, as a step-by-step approach. There's a real risk that we create unintended consequences by ignoring what we don't understand. By ignoring conversations and rooms and protocols and land grabs. The language of which we don't understand. The rooms into, which we don't have a doorway.

And ones that fundamentally do challenge our existing vested interests in the supply chains and distribution channels that industry has created and curated and dependent and made efficient and profitable over a hundred years. So that closed system and that desire to preserve value and drive for efficiency, which is really the definition of a corporate or any organization, is driving efficiency to milk the infrastructure for even more value. The consequence of that is ignoring an unclear, more opaque version of the world that's evolving that's simply opaque to them. Simply opaque to us.

And so what seems to be a genuine opportunity is creating a round table, a brain trust and active process of engaging the energy executives who are at the tip of spear of thinking about this. If you're thinking about LNG and how that might genuinely become a bridge to a future economy, where solar is absolutely working its way up. But, it's gonna take a long time. And we're thinking about bundling that with offsets and we're thinking about telling really great stories about those offsets, there's probably an equally important conversation to be in that says what if all of that was done in one place with more transparency?

And what if we brought that wisdom and that ambition into a room that includes others who aren't today invited. Who should they be? They should be the guys building the crypto version of the world.

And when I talk about the crypto version of the world, I don't mean Bitcoin. Bitcoin did an amazing job of establishing a model of currency that exists outside of the current fiat systems. But on the back of that, many, many new representations of currencies, assets and resources, what we call stable coins have become part of a daily traded system that actually buys and sells these tokens as a genuine representation of real life artifacts, nodes, resources, activities, right?

So that version of the crypto world, and these are both incredibly sophisticated and complex tech and data scientists, but also an incredibly sophisticated compliance mechanism. Some of which really blows my mind. Having come from a commodities trading regulated environment, where I was sure we understood all the opportunities and sitting in some of the conversations I do now with the crypto world and understanding how they are redesigning, compliance and governance for the very same commodities that we were tackling in my previous life.

That's incredibly powerful and we should at least understand one another's language and one another's strategies and help to create a better common framework for what will be a common protocol. And the protocol is the underlying system in which all of this stuff will be built.

The other people who do warrant a seat at the table are genuinely the activists. So they can give people a bad vibe when I mentioned that. But so much activism is focused on processes and commodities that the activist doesn't necessarily understand the provenance of. And doesn't understand the need or the consequences of, you know, even turning on their laptop, which makes those processes necessary.

So if I use a laptop today and I go and protest against an oil company, I have no moral high ground. Because my whole lifestyle is reliant on the hard work of these men and women all around the world to get this to me. So, that activist community warrants being engaged only to make sure we're talking about a common version of the truth. So that the legitimate concerns are absolutely integrated into this redesign and the ones that are based on a lack of understanding or alleviated through communication.

The tech giant, what I find fascinating, is how much of our day-to-day activities is being outsourced and thereby monetized by tech giants. While we focus as a society on trying to clean up and really restructured the previous version of centralized systems we put into place.

What do I mean by that? I mean, A hundred years ago, we created titans and giants sitting out of various offices around the world who governed the wealth of nations and their resources and monetize it. And were trying to work through the good, the bad and the ugly of that as we bring ESGs to the fossil fuel and extractive industries. The exact same thing is happening with the tech giants. As they start to intermediate our interactions as a society, as a market, and as companies with all the activities we used to be able to access just by walking into a store, walking into a bank, calling someone on the phone.

And if we don't engage in understanding what it is they are building and trying to both learn from that and influence those outcomes, for a more decentralized version of the future, we're just handing the baton over to another set of titans and it won't be the commodity traders. It won't be the extractives, it won't be the miners. It'll be a whole new set of titans.

And so our "raison d'etre" as an established industry really perpetuates. If we're able to take our learnings from the past, our infrastructure, our understanding of how markets work, our ability to deliver a supply chain safely compliantly and with a mindfulness to both reliability and security, but bring that into this new economy, that's being designed right under our noses, but without our participation. That's where the opportunity is.

And we'll make sure that the stories around it and the narrative around it also tell it so that the market knows how to react with a much more transparent view on origin, source tracking and all of the things that society says they care about and value and will pay for it today.

**Erik Townsend:** [00:46:05]

A lot of what we're discussing today, Maryam has implications in terms of the power structures and who is in charge of all these things. Let's talk now about the regulatory jurisdictional implications of all this, because you know, it used to be that almost all commodity trading happened in the United States.

Historically the United States had the strongest financial markets. When ICE, the Intercontinental Exchange was created, I don't think they ever said it publicly as a policy statement, but a lot of observers believed that it was created for the purpose of taking at least an alternative commodity exchange off-shore, out of U.S. Jurisdiction where they would have less oversight from US regulators.



Now we're seeing a new trend, or at least I think we're seeing a new trend, that Robert Friedland told us about last week, where smaller jurisdictions like Singapore are competing to tell these small companies like our sponsor Abaxx Technologies. Hey guys, you know, come to our small jurisdiction. We've got financial markets here, but we're ready to work with you on creating some of these new ideas. Is there a risk that the United States loses more of its stranglehold or monopoly on these financial markets as more agile and cooperative regulators in other jurisdictions encourage the innovators that are thinking about new ways to design markets, to come and work with them instead.

**Maryam Ayati:** [00:47:35]

Well, I'm always, always a big fan of anything that, reduces the ability to monopolize anything. So in that alone, I think anyone sitting in my seat or yours would welcome some competition for this activity.

The other thing that's really interesting and important in what you mentioned, Erik, is the future has to be a sharing economy model. And it's everything we described, everything we talk about decentralization, source tracking, peer to peer B to C, et cetera, is all premised on a, on a sharing economy model on neutrality. And, in many ways you know, the ability of the major fiat currencies to govern, regulate and dictate international behavior based on political preferences, that distorts markets more than anything.

So if there's an opportunity to bring genuine neutrality away from politics, regardless of which side of the divide one is on. If there's an opportunity to bring neutrality to the table and ensure that traded markets are behaving as they should, which is responding to market forces versus influenced by the political ability to manage more market forces, that's going to be an incredibly valuable outcome for all of the economy.

Does Singapore fit that bill? Singapore has been a longtime friend to me and many of the work I've done. I've called that home for four years. And I believe genuinely, just like Robert seems to, that the ability of this island city nation to govern with an ethical focus on liquidity, on getting the right commercial outcomes has been mind blowing and mind boggling. And what they've created, the economy they've created is a consequence of good governance, more than it is anywhere else. There isn't natural resources to speak up. There's a geographic advantage of being a port nation, which they of course now want to convert to being a port for data. And this fits beautifully into that model.

So I'm, I am a big fan of Singapore or any neutral jurisdiction, in housing, the activity that will by necessity be decentralized. It will be about a sharing economy with many, many nodes. Now, remember where we started this conversation talking about blockchain and is it able to be part of our day-to-day activities as a traded market. And the very essence of a blockchain is that it's decentralized. It doesn't exist in a single place. So it's immutable and the future will be decentralized. Where physical jurisdictions are that govern this is an incredibly complex and important conversation to get right.

And, I believe that the Singaporean government is doing an amazing amount of work, both in engaging on the subject, but also empowering the barriers, active participants who are trying to bring this to life. And that's a fantastic thing to see. And as long as they continue to do that, there's no reason for anyone to try to go elsewhere simply because tradition had it that way.

**Erik Townsend:** [00:51:42]

Maryam, we've talked about blockchain technology in terms of tracking the tokens. You create the token and early in the development process and it can be tracked and there's a ledger and so forth. I think a lot of our listeners understand that. But I'm sure a lot of people are saying, wait a minute, you can track the token from the time the token is created, you can see its whole history, but how are you going to know whether or not the green copper token really matches up to the actual copper that you're buying? Because you've got an identity problem. Now it's not a question of tracking, but how can I, I suppose you could stamp a lot number on the side of the copper billet that's being shipped to somebody, but you know, that's easy to forge. Uh, how could we be sure that the tokens in this new era commodity system we're talking about actually map to the physical commodities that they're supposed to be tracking and that, that relationship isn't being forged or manipulated.

**Maryam Ayati:** [00:52:44]

What a great question, Erik. And it's what takes this conversation from the realm of science fiction and fantasy to readily available today. Robert mentioned De Beers putting watermarks imperceptible to the naked eye on diamonds. That's an incredible starting point. We have partners we work with today that have the technology to inject any commodity with a molecular tracer that will survive extreme degrees of heat, extreme chemical transformation, extreme recycling, redistribution, cutting, chopping, melting, etc. And go,

even from seedling to a planted tree, to the furniture in your house and as soon as that scan on the blockchain, you will be able to see the total journey of that specific commodity sitting in your sofa, in your car, in anything you've built. That exists today. And it's been deployed in some of the most complex supply chains.

So when I talk about a recycled metal as a new commodity vs something where you pay an offset for recycling, the ability to ensure that the piece of metal you get exactly like you described, Erik, is the same one that has gone through this journey of being reused versus virgin. That's that's readily within reach. And it simply requires that convergence of a producer of these commodities to say, you know what? This buyer wants me to demonstrate to them that this is what I tell them it is. Can we please inject this in all of my commodities? Or in this batch of my commodities? And it's the commercial that is behind the technical, not the other way around.

**Erik Townsend:** [00:54:56]

Let me see if I've got this straight Maryam, cause this is pretty amazing what you're saying. You're telling me that five or 10 years from now, as I listened to this podcast, going back in the archives and I'm drinking my bottled water and the label on the bottled water says this bottle made from 100% recycled materials.

You're telling me I'll have the ability to take that bottle to a lab and find out if they're lying or not. I'll literally be able to see where that plastic has been, which that bottle is made out of. Presumably there might be lots of different molecules and I would be able to trace when those plastics were originally manufactured, what they were originally used to manufacture, when it got recycled, when those recycled little chips of plastic got melted down and made into new bottles, it's all on a distributed ledger, is what you're telling me?

**Maryam Ayati:** [00:55:55]

I'm telling you better than that to Erik. I'm telling you, you could do that next year and I'm telling you, you don't have to go to a lab. There are scanners, handheld scanners you could have in your home or in your office where you scan the bottle and it tells you what's stored in the blockchain for you.

I'll give you another regulatory angle for this and one I'm excited about. There's a lot of discussion around, or that was during the shale revolution, right? There's a lot of discussion around the fracking fluid and how it might work its way back into various taps of drinking water, pools of drinking water and into the potable water reserves of a society.

Now. If we were to inject this into the fracking fluid, and if the regulator were to require it, then as soon as I suspected as a consumer, that my water had been contaminated, I'd be able to scan it and I'd be able to know exactly which companies frack fluid has ended up in my tap water. This stuff is available and ready today.

It's not being commercially deployed at the scale it could. Because our world doesn't engage fully and openly with all of these opportunities. But imagine that enlightened tip of the spear leaders and organizations who do. The amount of value to be captured and monetized by getting this right, but also setting the standards for the economy that follows and is built upon it, that's priceless and a huge opportunity.

**Erik Townsend:** [00:57:43]

Maryam before I let you go, I have to ask about Neo. You are co founder and CEO of Neo. To put it bluntly, what the heck is Neo and why should we care?

**Maryam Ayati:** [00:57:55]

Well, thank you for that. If you found any of what we discussed today, either thought provoking or even ridiculous and you'd like to fight it out, you should care about Neo because we really bring together the giants of established industry with the sort of tech and data progressive's and titans that I discussed with the guys doing all of this crypto work. And we identify and really start to build tomorrow's most valuable business models on the back of established industries footprint.

So everything I shared today is what we work to bring to life with the ecosystem of partners we have behind us. The partners behind us are predominantly the real thought leaders in the crypto world, in the tech world, in the redesign of extractives and in the redesign of net zero emissions, tech, etc.

And we work with industry giants and their leaders to figure out how to work that into the way they invest in the future. We're not consultants, we're not advisors. We're really roll our sleeves up. Give you, as an industry partner, a deep understanding of this world and a blueprint of how you might invest in, participate in and monetize these opportunities. Or in the very least how might you know what's happening. So you decide if, and when you should participate.

We do this with a lens on ensuring that planet, profits and its people are deeply aligned. Because tomorrow's business models have to incorporate not just ESGs and not just the sustainable development goal, but really a platform where profit is on equal footing with its need to have a regard for our footprint.

**Erik Townsend:** [01:00:09]

Maryam, thanks so much for taking the time to give us a terrific interview. I look forward to having you back sometime for an update on the many subjects we didn't even have time to dive into this week. Meanwhile, listeners, I encourage you to check out [neo.co](https://neo.co) for more information on Maryam's latest venture.

My guest next week will be none other than Jeff Currie, Global Head of Commodities Trading for Goldman Sachs. I'm really looking forward to asking Jeff how ready the market is to embrace the kind of change I've been discussing with Robert and Maryam. And what challenges he sees as the strong case for change confronts an industry that's very used to doing things the old fashioned way.

Listeners, please help us get the word out about Smarter Markets. It's not every day you come across a podcast with guests of the caliber of Jeff Currie, Maryam Ayati and Robert Friedland. And we have a veritable who's who of industry legends lined up for interviews in coming weeks. Your ratings and reviews on Apple podcasts and other podcast platforms mean the world to us as does your help spreading the word about Smarter Markets, via word of mouth.

We received several emails and tweets and reaction to me telling listeners that Abaxx Technology stock will begin trading under symbol ABXX on or about December 15th. Quite a few of you wrote saying it can't find symbol ABXX on your trading platform. Well, the reason is that the stock hasn't begun trading yet and so the symbol isn't valid yet. Trading is expected to begin on the TSX, the Toronto Stock Exchange, on or about December 15th under symbol ABXX.TO.

The company has also filed for listing on the NEO exchange, but it's not yet clear whether trading will begin first on TSX or NEO. We'll let you know in future episodes, when the stock has actually begun trading.

For the MacroVoices podcast network, I'm Erik Townsend. See you again next week for another installment of Smarter Markets.

**Announcer:** [01:02:16]

That concludes this week's episode of Smarter Markets. For free episode transcripts, visit [SmarterMarketspod.com](https://SmarterMarketspod.com). Smarter Markets is 100% listener-driven. So please help more people discover the podcast by leaving a review on Apple podcasts or your favorite podcast platform.

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