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Financing the Energy Transition | Episode 7
Mark Frayman, Managing Partner, Orion Industrial Ventures

We close out our Financing the Energy Transition series this week with Mark Frayman, Managing Partner at Orion Industrial Ventures. SmarterMarkets™ host David Greely sits down with Mark to discuss the role of venture capital in decarbonizing mining and heavy industry.

Mark Frayman (01s):
So you'd asked about unique challenges about the role of mining. The way I think about it is we need to exponentially grow supply and that's both primary supply through extraction, but also secondary supply of these minerals to meet global decarbonization targets. I mean, period. We need to do it, though, with a relatively low carbon footprint. So I think about the greatest opportunity as a venture investor in this space is what are those technologies that can grow supply economically and efficiently and do so with a low carbon footprint?

Announcer (37s):
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?

David Greely (01m 03s):
Welcome to our final episode of Financing the Energy Transition on Smarter Markets. I'm Dave Greely, Chief Economist at Abaxx Technologies. Our guest today is Mark Frayman, Managing Partner at Orion Industrial Ventures. We'll be discussing the role of venture capital in decarbonizing mining and heavy industry. Hello Mark. Welcome to Smarter Markets. I'm glad to have you here today to talk about decarbonizing two critically important sectors of our economy, mining and heavy industry, and the role that venture capital plays in financing this transition. Now, I say these are two critical sectors because as we've talked about many times, mining is critical to producing the massive amount of minerals and metals we need to transition to a low carbon energy system and heavy industry remains one of the more difficult sectors to decarbonize. And you've been deeply involved in all of this. I know you've recently joined Orion Industrial Ventures as a managing partner after working at BHP as the Head of BHP Ventures, but first, you know, I was hoping we could start off today by getting a sense of how did you become interested in this particular decarbonization problem and in the role of venture capital in helping us solve of it?

Mark Frayman (02m 17s):
Well, let me start David, by saying thank you and thank you for having me on the show. I've enjoyed all the episodes up to this point in this series thoroughly and I am passionate about our natural environment. I'm passionate about, you know, the energy transition. I do love investing as a discipline and I love trying to identify a large macro opportunity, get deep into it and build true knowledge and then think about the optimal way to, you know, to capture that opportunity within, you know, you asked within this sort of broader energy transition how do I become interested in mining and venture capital. Well, as you touched on the scale of the challenges and the scale of the opportunity therefore for these sectors is just immense and compared to some of the other, I mean I wouldn't call them low hanging fruit.

Mark Frayman (02m 58s):
Everything in this space is hard, but some of those other sectors that have had, you know, larger influxes of capital like primary electricity generation, renewables, transportation, these sub-sectors within heavy industry have been perhaps overlooked or misunderstood by slices of the investment world and the size of the opportunity there and I think that is starting to change and we can touch upon that later you know, the scale of what we need to do to house feed and move around our growing population and the role mining and heavy industry must play in that is just, it's immense, you asked why therefore venture capital, I think there's a clear role, you know, the large incumbents in those sectors are going to play a key role in providing the growth in minerals and materials that we need. However, needless to say, we need fundamental innovation and technology history has shown that venture capital and often external companies and emerging companies a best place to provide that sort of catalyst of new ideas and new innovation.

Mark Frayman (03m 54s):
And I think that right now we're starting to see that influx of talent, you know, the attention influx of capital into this space in venture. I think we'll see some of the truly game changing solutions start to emerge and I think, you know, a really well constructed and considered venture capital portfolio that brings both, you know, a strategic and insight angle and helps these companies scale and get the access they need as well as early stage funding can really move the needle and, and in and in the current world actually be quite profitable.

David Greely (04m 24s):
I'm excited to dive into the role of venture capital in all this, but maybe for our listeners who aren't as familiar with the operations and carbon footprint of mining and other heavy industry, how do these activities contribute to carbon emissions and how big of a contributor are they?

Mark Frayman (04m 41s):
Let's begin with mining, which I think is somewhat standalone cause you're saying mining and heavy industry, you know, contrary to popular views, mining's not actually such a significant contributor to global emissions via direct operations, either scope one and two emissions, you know, it's more in the downstream use of these material minerals, particularly the burning of coal electricity but in other, you know, in producing other materials too that we start to see the really large emission footprint emerge. That's not to downplay the role of mining and decarbonization. We can come back to that, you know, grow, as we said, growing the mineral suppliers to me, one of the greatest investment opportunities we're looking at right now, then coming back to industry. So steel cement, chemicals, throw in mining and manufacturing. To me it's really the sectors that produce, you know, the sort of building blocks of our society in that regard.

Mark Frayman (05m 27s):
They're pivotal to future ongoing growth. Broadly speaking, industry represents about 30% of global CO2 emissions which is more than prime electricity generation, about 27 to 28% and almost double transportation, which is quite incredible given, you know, the time and, and the capital directed those two other sectors still by itself contributes between give or take eight to 11% of CO2 emissions, depending again on measurement and location. And you know, if it was its own sort of country would be arguably the third largest CO2 emitter behind only the US and China cements about 8% of global emissions and chemicals is, which obviously feed into plastic production. About about half that. So these three buckets together if heavy industry contribute to about 20% of emissions.

David Greely (06m 13s):
That's interesting because you do hear so much about the power sector and to think that industry is about comparable to that and of course, you know, we're very familiar with the efforts in the power sector with renewables like solar and wind, but what are some of the unique challenges that you see in decarbonizing these sectors, you know, the mining and heavy industry sectors?

Mark Frayman (06m 33s):
Sure, let's start again with mining, which is relatively speaking is arguably a lower hanging fruit than, than some of these heavy industry and hard to abate sectors and again, we can come back to mining's role later, but the challenge for mining, as I said, is generating more minerals at an economic cost to help drive electrification of the overall economy and support growth, but the key contributors to mining scope one and two emissions do vary by operation. Each commodity acid geographies is quite different, but at the highest level I think, you know, the buckets I think of are sort of decarbonizing heavy equipment, meaning that includes mine site fleet and there it's really at the heart of it, sorry, about replacing diesel that can be delivered through electrification of the equipment and shift to fuel cells. We can have some solutions like renewable fuels and of course just simply operating efficiencies, you know, operational efficiencies, getting more out for less or more out for the same even.

Mark Frayman (07m 23s):
But you know, those challenges, it's particularly hard in a really big operation to get the performance needed from a piece of heavy kit and it depends on what it's, and we can go through that, you know, to get the performance levels acquired from a shift to battery electric can be challenging. Decarbonizing another element in the mine site such as, you know, power suppliers, probably the other big bucket usually that involves massive renewable electricity infrastructure with storage often you know, pretty common challenges and are well understood. Some operations have unique challenges like methane and coal mining, et cetera. The challenges for the material sectors or the heavy industries which discuss to probably a bit more fundamental, David, you know, at an overall level we are able as

society produce these massive volumes of cement, steel, et cetera that we need at incredibly efficient low prices, largely due to the availability of cheap fossil energy.

Mark Frayman (08m 12s):
So begin with both steel and cement production require incredibly high temperatures approaching 1800 degrees Celsius steel above 1400 for cement steel blast furnaces, cement kilns typically have been powered by cheap fossil energy. So we need a solution for that. Can we get cheap, continuously delivered renewable power, but the tricky part really isn't actually the process themselves where the fossil energy is actually an input into the processes. So it's not as simple as just replacing the source of energy or power a reduce iron. In the case of steel, I should say, to reduce iron oxide, which is FE203 to pig iron, you need to redact it and typically that's being carbon that's provided by feeding the blast furnace of coke from cola, there are some new approaches emerging, which would come to later where you can actually use hydrogen as the redactant as well as fuel source.

Mark Frayman (09m 02s):
The challenges there become, you know, one and will come to the general challenges, but the specific challenge there comes in dealing with iron ore qualities as you know, the most economically available iron ore, particularly Australian iron ores have relatively high impurity such as alumina, silicone, phosphorus, all of which can be removed in the traditional bosphonous approach struggle with some of the new, the hygiene DRI approach. There's a similar challenge and the limestone clay are heated in a rotating kiln and high temperature that limestone is converted to lime, which inherently reduces CO2 during the process and that alone contributes to about half of cement CO2 emissions. So again, something fundamental in the process. It's not as simple as changing the power source, you can keep going into that, but you know, there's a fundamental challenge and then there's sort of the, the inbuilt challenges of these sectors. So it's say David, look, the technology solutions do exist and I'm happy to step through them now if that's interest.

David Greely (09m 57s):
Yeah absolutely.

Mark Frayman (09m 59s):
Sure. So broadly speaking you know, some of the pathways would include keeping inducing infrastructure, but building point source carbon capture onto it. That could be post combustion capture, pre combustion or another approach could be improving the efficiencies of the overall process and the material input can be introducing a new renewable energy source, as we said earlier, such as hydrogen or heat source and so while each of these has, you know, its own challenges in integrating into a new operation or even building a new one, the challenges when compared to heavy industry are very similar across the board, which is first these downstream industries operate on razor profit margins. So introducing new costs into the equation is a considerable, it blows the economics out. Second, there's the inbuilt capital stock. So one of some of these technologies could be economically a viable when compared to say greenfield build decision, existing plans are still have 10, 20 plus years of useful life almost always gonna be more cost competitive than building something new.

Mark Frayman (10m 57s):
Third, for those startups looking to integrate into an existing operation, these companies are in old world industries. To get a small startup into a big company to get, in the case of mining a site, GM or a plant manager to take a risk on a new technology where an outage for hours, let alone days or weeks could cost millions of dollars a lost production. Now that's a huge risk, it's a very hard penetration challenge and then fourth, and we can return to this point, but you know, until recently there wasn't so much access to capital for these early stage technologies in these years, and that's changing at the early stage. I still think some of these technologies will need capital at the sort of pilot stage to sort of be fully de-risked till they're ready to be integrated into an operational or a standalone operation.

David Greely (11m 41s):
You list a lot of really unique challenges there. I think in particular, the one that's sticking in my mind is, as you said, not just about changing the power source to a low carbon one, but CO2 is released as a just an innate part of the process of making things like steel, making things like cement. So it's really reworking the entire production process, which is a huge deal and you know, in addition to those unique challenges, you know, the, this has a u there's a unique role for heavy industry in our overall plans to decarbonize the economy because in order to do, you know what we want to get to a low carbon economy that is, you know, have widespread electrification powered by low carbon renewables, right now we're gonna need massive amounts of metals and minerals like copper, nickel, a lithium cobalt, you know, the list goes on and on and you know, setting up a wind farm takes an awful lot of steel and cement

the same thing across the board for a lot of these projects that we're considering and so this creates a unique role for the mining industry and the energy transition broadly and so how do you think about that unique role in context of the unique challenges because we want to be decarbonizing broadly, but you know, we don't want to be adding a lot of carbon in the effort to do it through the heavy industry and mining practices that we employ.

Mark Frayman (13m 01s):
Right and that framed it perfectly, that's a very nuanced role, particularly the mining and mineral sector in this, in that, you know, the stats are now starting to be well understood and float around instead just the sheer volume of what we need and that's not just the materials for batteries, as you said, like in a wind farm, you know, I think I've read somewhere that one terawatt hour of electricity from solar and wind could consume 300%, 200% more metals respectively than generating the same amount of energy from a conventional gas power plant. It's incredible in demand growth for lithium to meet sort of COP 26 targets as some forecast 17 times a 17 x growth. It's incredible. Nickel, which is even a larger market than lithium could go 7 x or more, you know, but the big one of course is copper, you know, and EVs, I mean the copper demand, there's huge, so you'd ask about, you know, unique challenges, but the role of mining and I think the way I think about it is we need to exponentially grow supply and that's, you know, that's both primary supply from through extraction recovery, but also in secondary supply of these minerals to meet global decarbonization targets.

Mark Frayman (14m 13s):
I mean, period. We need to do it though with a relatively low carbon footprint. So I think about the greatest opportunity, you know, as a venture investor in this space is what are those technologies that can grow supply economically and efficiently and do so with a low carbon footprint. So starting with primary supply, it's largely well understood that, you know, exploration rates in mining and discovery of news resource bodies has fallen off a cliff. You know, majors like Rio, et cetera, head back explosion budgets significantly, they almost half of what they were a decade ago and some of the materials we really need, you know, sort of nickel, lithium, cobalt, copper, they make up 0.002% to 0.05% of the earth's crust. It's different than the case of and aluminum. So technologies that can discover more deposits and that's not necessarily a high intensity carbon activity, but things that can help in discovery are gonna be really exciting to me.

Mark Frayman (15m 13s):
And you can do that by sort of acquiring new data that we can't currently acquire new companies doing that, trying to apply shallow seismic to mining, et cetera and there are companies that can analyze that data in, in new ways using AI like cobalt or their AI. There are ways to economically extract more from existing deposits and that's sort of in the get more out for less but also recover all bodies or parts of all bodies that are currently seen as waste. So can we leach and develop a new catalyst to recover copper, you know, which is really low grade 0.3% sub point, 3% copper. There's a, there's a raft of startups looking into lithium extraction. Can we get more lithium now without the brine pools and do so, you know, with relatively low water and asset footprint, you know, and then there's those operations that are, you know, so there's those startups that are really just looking to optimize operations, you know, and that can be using, you know, again, an AI platform and more optimizing mind planning even in the other area.

Mark Frayman (16m 11s):
I'd say you can grow supplies, obviously companies looking at new domains like asteroid mining and seabed mining. I mean, that's not, not investment areas, I particularly find that exciting today, but you got to keep an eye out for that and then there's sort of secondary supply, which I think is a huge opportunity. Can we recover end of life batteries and extract the copper and nickel from those do so with a relatively low carbon footprint and, and just deliver more materials to the world. Can we cover from waste, you know, tailings repurposing your reuse? So all those ways to grow primary and or second secondary supply to me is, is a, is a really important focus from investment perspective in mining.

David Greely (16m 48s):
Yeah, it's a really important technologies and I was running a, I wanted to just stay on the technology point for a second. I still am really interested in this idea of the, the CO2 release that's inherent in the process, not just the energy source and I was curious if there's any technologies you're seeing to have a, a lower CO2 emission process and things like, you know, steel production or cement For

Mark Frayman (17m 12s):
Sure. I mean there's multiple ways you can look at decarbonize those sectors as I said, there's sort of two buckets I think about their emission footprint. So one's the input, you know, the energy source that's actually powering these operations and particularly given they're so high heat, you know, they're companies are emerging that aren't necessarily just focused on those sectors but have a direct

application in them. You know, like a high temperature thermal battery company that could supply, install industrial heat and deliver back to the operation and recycle the heat. That's an interesting sort of investment area for me. Same in, you know, in the case of hydrogen, which we said could both be an, you know, fuel source but also a reductant in the coal posts and there's many companies out there with new hydro electrolyzer technologies, you know, there are many, but some of those actually reaching tipping points where they're approaching economic sort of delivery of that. But you know, then there's those technologies in the steel space, for instance, that are looking to fundamentally change the process. So, you know, one that, or two that I know relatively well is Boston metal with their oxide electrolysis process and then electro steel, which is a fairly unique process, an elegant one too, both of which are looking like a fundamental shift in electrochemical approach to reducing ultimately into, into steel. So those technologies, you know, gain require huge amounts of renewable power to operate, but they're reaching a point where they're becoming really interesting.

David Greely (18m 39s):
Yeah, and this is one of the, the reasons I really wanted to talk to you because you know, we, we hear the phrase emerging technologies, you know, you naturally think in terms of financing, venture capital is a very natural way to finance emerging technology. We're all accustomed to that. On the other hand, mining and heavy industry are traditionally very highly capital intensive industries and so one might not think of venture capital as a natural financing source. So I want to understand better, you know, what is the role of venture capital in financing this energy transition and mining and heavy industry and how important do you think it is overall?

Mark Frayman (19m 14s):
That's a great question, David, and I've seen, I've seen it change over the last few years, frankly but some of these deep technologies are at an early stage, you know, lab scale, trying to get from a flow sheet to a very early stage sort of lab demonstration. The funding requirements perhaps more significant than to say a software business, but they're able to be met through venture capital financing and, and frankly, some of that risk is best held with an a venture capital portfolio and a really early stage as these companies grow, the role of venture is changing and needs to change as they grow to a level where they've got a demonstration. Having access to not just capital, but access to corporate partners, access to land access to raw material input becomes almost as important as capital to de-risk these companies and a well-considered venture strategy, and that's both financial VCs and even in-house at corporates needs to think about how can we help these companies sort of not just cross the chasm of getting the first check into the company to get going, but how do they cost that chasm to get from the lab into something that's commercial as a demonstration and the ability of venture capital investors that are relatively hands on, you know, there's all the business model support, technology support that you'd expect from venture, but in this space, particularly being able to bring access to people, access to projects or, or portfolio assets to, to test technology with becomes really pivotal to these companies in derisking them.

Mark Frayman (20m 49s):
And then at that stage, you know, the corporate customers start to emerge and then they might have some initial off take and that's another form of financing to help get, you know, beyond the many of these are relatively infrastructure heavy or project heavy and we're staying particularly the latest stage round, very large firms, Wall Street firms or asset managers come in and fund the actual, you know, the latest stage rounds of, at first it was being done through venture equity, you know, in C and Ds, but I think you you'll start to see some of that shift in the current environment and look to really project fund or infrastructure fund some of these demonstrations and I think that's a big opportunity, but that sort of gap to get from early, early stage traditional venture through past your series sort of A to B round into something that's demist enough that both a corporate can underwrite an initial project or take initial off take and then in the next round some of these bigger plays can start to fund the infrastructure. That gap still just needs to be bridged and frankly actually there's probably an opportunity there now that some of this technology can actually be attractive on a risk adjusted basis.

David Greely (21m 56s):
And I love that word you used for the gaps, the chasm. I imagine for many developers it feels that way and I wanted to ask you for the, you know, with venture being so important for helping companies cross that chasm and get to the stage where, you know, corporate off-takers can come in with, you know, the higher capital levels on a de-risk project. What are some of the challenges that you see venture capital facing in these sectors?

Mark Frayman (22m 20s):
Yeah, it's a great question. I mean, I think there is now a critical mass of venture sort of capital funding climate tech and I think the first guest of the series net Bloomberg really covered that well. I think that the investment universe is more than large enough. It's, it's, exciting and, and expansive. So I don't think those are two challenges. I mean, typically sort of climate tech or the old clean tech face challenges, given the sheer capital intensity as you say of some of these activities. I think as the funding markets around venture and

more generally the, the way to capital at the later stage of the energy transition investments comes to the market. I think some of that, that risk is dissipated here. I think the big challenges is you look at these companies, right, and the emerging companies and many of them are trying to sell solutions to old world incumbents.

Mark Frayman (23m 13s):
Penetrating that sort of sales cycle is extremely difficult, particularly where you've got a really technical founding team that may not be strong sales, but in any event, you know, the decision making for all the reasons we discussed earlier, the risk elements, but also just the, the culture of some of these companies is, is slow. So it's a really hard way to get going and then if you do as a startup, you're sort of selling a service or to a large company that's, it's really challenging for me as an investor to get venture scale returns on a company like that. Can it be done yes, because if you penetrate enough or even just a few really large customers, you can have an exponential sort of hockey stick growth in revenue, but it's a challenging pathway. The other pathway some of these companies are looking to actually disrupt some of the majors, you know, where they actually start to generate or establish their own operations or get, you know, production royalty for incremental growth in the case of mining and actually become sort of the minerals and materials players of tomorrow.

Mark Frayman (24m 11s):
And that's a path to being a, a very large company relatively quickly if you can achieve it. But that, that is more capital intensive and it's obviously more challenging to try to disrupt these industries with their existing capital stock and their existing market share on top of those sorts of challenges and you look at they're the challenges as much that the startups face then obviously therefore become challenges for the venture investor in the venture world itself. I think access to talent, like everything in, in the space of climate right now is a challenge and a really high grade talent is competitive. I think that's a big focus for a lot of investors at the moment. I also think thinking globally, increasingly what the US was and still poppier is the nexus of a lot of these technologies, many of them particularly in mining and downstream industries like those have discussed are gonna be implemented in jurisdictions all around the world. And having that global reach and global access is really important both for the company but obviously for the investor as well.

David Greely (25m 09s):
And I was curious, you know, just to kind of finish the, the flow through of these investments, you know, you, you have the, the lab scale venture funding getting across the chasm, corporates being able to invest some in, you know, de-risk projects and I'm curious just this whole notion of scaling up you know, with these companies, with the large carbon footprint that Jim mentioned. How are companies from their perspective in these industries, you know, looking to scale their investments in decarbonization

Mark Frayman (25m 40s):
By companies I presume you mean the existing corporates, not the emerging startups correct.

David Greely (25m 46s):
That's a great distinction, but I was thinking the, the existing corporates.

Mark Frayman (25m 50s):
Yeah, I mean it differs company by company. You know, if you look at each sector, some have been really on the front foot both in terms of decarbonizing the operations but also sensing the revenue opportunity and the cost opportunity and being the first to decarbonize and so it depends on the company, it depends on the opportunity set that presents for it. So in the case of mining, as we discussed earlier, something like electrifying a mine site, companies are either funding themselves or co-funding with developers, large renewable projects looking at storage options, et cetera. I mean in terms of scale, it's a very fast way to get large amounts of capital at work. Many of them are then trying to develop their own unique solutions to optimize the efficiencies of their operations and then many now establishing venture arms or accessing the venture community to look for earlier stage technologies that they can, can integrate into the operations and look should they find one, I think a mining company is a natural acquirer of some of these and or just partner with that technology and, and that technology company and scale them up across their entire business in the downstream space.

Mark Frayman (26m 57s):
You know, again, I think you're starting to see some of the large steel producers increasingly get on the front foot, particularly I should say ex China outside of China and make, you know, significant investments in both hydrogen alternatives to the existing furnace approach as well as looking at some of those companies I mentioned earlier, like a Boston Metal oil saying, well those companies could

be a new solution to still making for tomorrow. I think getting early stake in those companies and a partnership with them is an interesting way both to get insights, but also to stay across those trends and potentially integrate them in some form. So I think they're, they're both playing the large capital play and, and funding their own projects as well as looking into the venture community and allocating capital there to ensure that, you know, they've got access to, to those technologies even when they emerge to be true competitors or truly applicable in their business.

David Greely (27m 51s):
And, and because you pointed out the distinction now I feel like I got to go ask because I'm curious how is it different from the other perspective like scaling from the emerging tech side?

Mark Frayman (28m 01s):
Yeah, it depends on the company's strategy. You know, as I said, many of them as like to the extent you're selling a solution, you're trying to get your tech to a level where it's a, you know, a corporate or an existing company can run a pilot with you and then if it works well hopefully get scaled across their operations and then into their peers. So the, the task of scaling is no easy feat, but you need to get to that level where you can run a, a successful pilot if you're trying to fundamentally disrupt these companies or build your own process. I think as a startup you need to be very, very thoughtful about that from the start. So you need to think about, you know, what's your path to market, how can you curate not just your own team, but your investor set and your partner set so that you can start with a manageable focused slice of that market, get some initial traction there and if it works, look to expand and have the partner base and the access to capital later stage capital to fund that.

Mark Frayman (29m 01s):
And that could be from a corporate, but you know, could also be from a large investor, you know, as some of those we discussed that typically play at the later stage but you need to be focused and not get overwhelmed by the size of the steel market. You need to think about where we gonna play, what's their quickest path to market that's economic and perhaps targeting, you know, the really high value steel product and perhaps doing it in a space where there's renewable power and access to iron ore built. How can we get going at a profitable margin relatively quickly and then look from that to expand.

David Greely (29m 35s):
Well, I'm really glad you made time to talk with us today because I know you're very busy. You just recently, recently joined Orion Industrial Ventures as a managing partner, so thank you for making some time for us and before we let you go, I really wanted to ask you, you know, what are you looking forward to working on now?

Mark Frayman (29m 53s):
I'm really excited about what lies ahead. You know, it's been an exciting and thrilling last few years, investing in this space, watching it evolve. I look at it now and I think the opportunity set in terms of both capital being directed to this area, the flow of, you know, technologies coming to this area and, and corporates and customers capacity and willingness to pay for some of these solutions is the greatest I've seen it, you know, since I've been investing in the space. So I think whilst, you know, we can now we can always have targeted a big decarbonization problem, the investment opportunity here now is particularly compelling and I think at a tipping point, the Orion platform is a really exciting place to start to look at that. I mean, Orion's large asset in the mining space with a really strong track record of value creation both in, in mining and some processing assets.

Mark Frayman (30m 42s):
And I think coming on board to launch a dedicated venture product there really marries that opportunity to be both nimble financial capital, well nimble and, and flexible financial capital as well as bring, you know, true strategic value to our companies and our investors by being able to access the portfolio people product, et cetera. So I'm excited to be in a really important global area and decarbonization within that area, a really important sub sector being mining and heavy industry, which to date has perhaps been, you know, overlooked at a time where I actually think we're about to see some of these technologies really tip over and be mega companies of tomorrow and be able to pursue that through a platform that I think is perfectly placed to deliver that sort of strategic value as well as capital to these companies. So I think it'll be a whirlwind few years ahead, but I'm very excited and you know, thank you for today as well, David. I really enjoyed the discussion.

David Greely (31m 42s):
Thanks again to Mark Frayman, Managing Partner at Orion Industrial Ventures. We hope you enjoyed the episode. This concludes our series Financing the Energy Transition. For next week we're working on something special to celebrate the holidays and our 100th episode. We hope you'll join us.

Announcer (32m 00s):
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