STEPSTONE

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RPM Ep 35 transcript

Maribel Yoo: [00:00:00] Welcome to RPM, the podcast that explores the world of private markets. I'm your host, Maribel Yoo. On this episode, we're going to revisit a topic we discussed a few months back – The Inflation Reduction Act of 2022. I'm excited to welcome back a member of Stepstone's Responsible Investment Team, Managing Director Bhavika Vyas, and Julio Friedmann, chief scientist at Carbon Direct. For background, Dr. Friedmann is one of the most widely known and authoritative experts in the US on carbon removal, CO2 conversion and use, hydrogen industrial decarbonisation and carbon capture and sequestration. Presently he works on the science and research team at Carbon Direct, working with clients to solve major technical challenges around carbon management and removal. Dr. Friedmann recently served as Principal Deputy Assistant Secretary for the Office of Fossil Energy at the Department of Energy, where he was responsible for DOE's R&D program and advanced fossil energy systems, carbon capture and storage, CO2 utilization and clean coal deployment. More recently, he was a senior research scholar at the Center on Global Energy Policy at Columbia. He has held positions at Lawrence Livermore National Laboratory, including chief Energy Technologist. In our last episode, Bhavika and Julio covered the intent and potential impact of the Inflation Reduction Act. Since then, new guidance and key provisions was released in an effort to accelerate economic and climate benefits as well as provide clarity. We're grateful to have Bhavika here to guide today's discussion with Julio. I'll let you two take it from here.

Bhavika Vyas: [00:01:30] Thank you, Maribel. It's a pleasure to welcome you back, Julio.

Julio Friedmann: [00:01:35] It's a treat. Thank you for having me.

BV: [00:01:39] Before we get into the questions, I wanted to just give our audience a quick reminder of the high-level facts of the IRA. On August 16th, 2022, the federal government signed the Inflation Reduction Act into law, which directs new federal spending towards the reduction of carbon emissions and lowering of health care costs. The IRA directed approximately $370 billion in federal funding to clean energy, with the goal of sustainably lowering the nation's carbon emissions by the end of this decade. The funds will be delivered through a mix of tax incentives, grants and loan guarantees. Clean energy and transmission command the biggest slice of this, followed by clean transportation, including electronic vehicle incentives. Incentives will be materially reduced and renewable and other carbon free energy costs, with the potential to drive carbon free energy to 65 to 80% of energy by 2030. The Act aims to catalyze investments in domestic manufacturing capacity, encourage procurement of critical supplies domestically or form free trade partners, and to jumpstart R&D and commercialization of leading-edge technologies such as carbon capture and storage and clean hydrogen. Legislation of this magnitude and duration lasting through the 2030s and beyond is likely to have meaningful and lasting impact across the US and globally and really impact energy systems, supply chains and related industries. Julio, we had the great pleasure of speaking with you on the potential opportunities

unlocked by the IRA on our podcast back in March. Now a year out from its passing, we appreciate you joining us again to give your thoughts on where we are today, the perception, the reality and where we need to be headed in order to fully realize the IRA's potential. At the outset when the act was passed, there was a great deal of excitement from investors and operators on both the concept and the scale of the IRA and maybe some mixed views from environmentalists on topics of permitting and development and carbon capture. I know that the details of the tax laws and mechanisms for deployment are still being worked out. But overall, it seems that there's still this perception that the Act hasn't spurred investment as quickly as anticipated. At the same time, though, across the country, the gusher of federal cash from the IRA has spurred more than 270 energy projects worth $130 billion, according to a July report from Bank of America. Clean energy jobs have grown to more than 40% of all energy jobs in the US. What are your thoughts of this discrepancy between the disappointed expectations and the reality of what's happening?

JF: [00:04:16] I don't know where this idea of disappointed expectations comes from because I was just at a conference the Department of Energy held in Washington, D.C. This is Jigar Shah Deploy23 event. That number is now up to 350 big projects. So we keep seeing more and more projects announced. It is also the case that you announce a project, but that's not the same thing as final investment decision. Final investment decision takes years. So of course the money hasn't been spent yet. And of course, in order to make a final investment decision for many of these tax credits, because that's what the IRA mostly has is tax credits, you need clarity from the IRS. And what the IRS says about the IRA will determine how much money actually flows. One example of this, for example, is around green hydrogen. You get a big tax credit under the new 45 V title, as much as $3 a kilogram of hydrogen, which, by the way, is like $300 a ton for CO2. It's a big incentive, but you have to be reaching a certain level of cleanliness in the life cycle to get that credit. Well, the IRS hasn't defined that yet, so projects don't know if they qualify until they do know they can't make an investment decision and they can't put together an offtake agreement. So I'm seeing lots of money coming off the sidelines. I'm seeing lots of money going to projects. I'm seeing lots of announcements. But nobody should be surprised that we haven't spent the actual dollars yet because that's going to take some time.

BV: [00:06:06] No, that makes sense. And as you look at topics like that, as you're describing the clarification around green hydrogen, what are the other, you know, points of clarification amendments that regulators and the IRS need to look through to sort of smooth that process, to get things moving from the approval process to the actual deployment.

JF: [00:06:26] Well, one of the big frameworks in the IRA is they want to have more Buy America. So they want American production lines. They also want American sourcing for critical materials, things like lithium or copper or rare earths. And those are in the law. Well, what does that actually mean? What would qualify as US production or US servicing? And the IRA is ambiguous on some of these points, and so the IRS needs to provide clarity. One of the curiosities of this massive climate program is we're relying on tax auditors to deliver the future. And so it'll take us a while to sort out how this happens. Another one is if you're going to build a big new manufacturing facility for something like Microinverters or something that makes electric charging infrastructure stations, again, what qualifies is you need to understand that before you can move the money

into those projects. And the IRS has its hands full and they are doing their level best, but they've been given a huge chunk of work and they're trying to get it done.

BV: [00:07:42] On that point, I do want to come back to the question of the capacity at the IRS to handle this big task. But on this question of the multiple questions they're looking to answer, is there kind of a staging in their mind of the various sectors the IRA is looking to address and which ones they'll look to clarify first or next or in order?

JF: [00:08:02] Uh. Not to my knowledge. I think that they want to deliver first the ones that have the biggest impact, whatever that is assessed as. So, for example, things like getting the solar production up or getting battery production up, people reasonably think that those have the opportunity to really deliver climate benefits and commercial and economic benefits. There are also some of the more complicated ones. So you don't want to rush into those decisions because if you rush into that decision, you can either exclude really good actors and projects needlessly or if you go the opposite way and you make it too generous, then suddenly it's a lot of money and you have a bunch of people who shouldn't be in this business, in this business. Uh, that's exactly the kind of discussion that's going around green hydrogen. So the fact that they're taking their time I think is okay. But reasonably, everybody wants to see the money spent, the projects built, the abatement happen, and that's going to require more speed, not less.

BV: [00:09:15] Coming back to the question, the point that you just made around the capacity of the IRS to take on this challenge, you know, how do you think about, as you mentioned, we're sort of trying to enact climate policy through tax policy here in this act. This is a big undertaking for the IRS. How do you think about the capacity of the IRS as it is, what capacity needs to be added and what other organizations are supporting mechanisms might be needed to fully deploy this big set of funds in through all of the various channels that it needs to be deployed through.

JF: [00:09:56] Right. So unsurprisingly, the IRS has been given this enormous task and then Congress is unwilling to increase the IRS budget. So we'll see. Certainly Janet Yellen, the secretary of the Treasury, cares about this a lot. She and the assistant secretary for tax policy have been working it. So I think, you know, I think we're going to see good things. I just can't be cavalier about the specific trajectory. That said, I do want to say that if they get this done right, the number is probably going to be bigger than $350 billion. These tax credits are uncapped. It could be as much as $700 billion and even $1 trillion of actual expenditure by the federal government. So it's truly transformational and everybody gets that. So they want to do the right thing. They want to do it carefully and well. There's not a lot of heel-dragging. And the IRS is reaching out to experts around the world and saying, help us do this. We're tax experts, but we're not necessarily critical minerals experts like help us think this through. Yeah, And they are doing that judiciously and well.

BV: [00:11:07] That makes sense. Maybe on a related question and, you know, sitting here where we are on the heels of a next presidential election, you know, certainly environmental regulation has become a bigger focus of debate than I think it has been in prior elections. You know, as it relates now to both economic and energy security, geopolitics, resource scarcity, the role of emerging markets, there's many facets to the to the energy and climate question today. And we've spoken about the perception and the reality of that and what may be really going on behind the scenes. You know, many of the announced projects that you spoke about just now are actually in traditionally red states. There are extra incentives for projects that are in communities that are historically dependent on fossil fuel industries. There are states, some of the states that are seeing some of the largest job creation from clean energy projects have tended to be Republican leaning, such as Georgia and South Carolina, Tennessee, Kentucky. What's your view of the state of play currently? Where the Act will be vulnerable politically in terms of size, scope or enabling mechanisms and generally of like the sort of framing that the act is politically as vulnerable as as some may claim it is.

JF: [00:12:23] Yeah, I think we're seeing the opposite of that. I was just in Washington and there is broad bipartisan and broad bicameral support for the provisions of the act, in large part because of what you just said. A lot of the benefits are going to go to Republican districts. A lot of the projects are going to go to Republican districts. A lot of the job creation is going to go to Republican districts. So a lot of Republicans are pretty enthusiastic about it. And even attempts to sort of weaken 1 or 2 planks of things that, you know, traditionally Republicans haven't been fans about. Things like onshore wind or solar power got very strong pushback in those districts because, in fact, a lot of Republican districts are buying or building EVs and batteries and solar and wind. And so I think that the act, the IRA is incredibly durable politically, and we'll see if that's true. But this sort of drumbeat to cancel the IRA, like, I don't see that and I don't believe it will happen.

BV: [00:13:42] Is there more vulnerability in some of the, you know, details around the transferability of credits or the the actual details around the execution of the credit markets? Or is that not the case either?

JF: [00:13:59] That's not the case either. What I'm hearing is, in fact, people saying, well, we're going to have a chance to amend this again. And the idea is to amend it for more action, for more deployment, not less. Um, and that's true again, both chambers, both parties are, are saying this for real. I also have been hearing a lot about the fact that the Trump tax cuts expire in 2025. And so the next administration, the next Congress is going to have an opportunity to renegotiate all of these things around the expiration of the Trump tax cuts. And so I don't see exactly how these things fall apart. Quite the opposite. I continue to believe that people will seek greater ambition, not less. And that's what I'm hearing from experts in the field. That's what I'm hearing from project developers. That's what I'm hearing from banks. That's what I'm hearing from members of Congress and their staff.

BV: [00:15:01] That's great. That's great to hear the view from you and from, you know, folks who are in the inside and hearing it from all of those constituencies. Moving further beyond the US, you know, we know the

domestic content requirements of the IRA relate to concerns around energy security and how sourcing of key metals and rare earths refining processing capacity may play out in global politics. The IRA has gotten some reactions, particularly out of Europe and some of the discussions around emerging markets who are, you know, the source of these inputs or the location of much of the processing. What is your view as you look at the global landscape of the knock-on effects of the IRA and how that might influence international regulation, trade policy, the perspective of global investors?

JF: [00:15:49] The first thing that I've seen is a lot of foreign direct investment back in the United States, European countries, Middle Eastern countries, East Asian countries and South East Asian countries: they're going I'm going to put my money in the US because the policy environment makes it easier for me to make money. So we're starting to see actually a pivot of supply chains towards the United States, which is interesting. And that was in fact the whole point. Part of the goal of the IRS was in fact to make the United States the center of the clean energy economy and to attract those foreign investments. A political response to that, unsurprisingly, has been stuff like the carbon border adjustments from Europe, The CBAM, the Carter Carbon Border Adjustment Mechanism is a response to that to help keep their domestic industries in Europe. And the United States has gotten kind of huffy about it. But in point of fact, it's a reasonable thing for Europe to do. And the United States is in constant negotiations with OECD countries, with members of the European Commission and the European Union nations to try to find a way to do it well, because at the end of the day, the goal is not just economic growth and economic development. They really need to bend the curve on climate, and that's a team sport. So these negotiations will try to figure out, well, if you're going to do a carbon border adjustment, how can we do it in a way where you're not grossly disadvantaging any clean producer, whether that is Uruguay or Texas is like a separate story, but how do you make sure that the good stuff goes through and then the United States will have to actually deliver that level of cleanliness or else they can't have access to the European markets? So we'll have to see how all of that goes. I will also say that the issue of sourcing of materials really boils down to China, as we've heard before. China has something like 90% of the refining capacity for rare earths for lithium. Something like 60% of the refining capacity for things like cobalt and other for graphite. As a consequence, there is a real push now to diversify those refining supply chains as well as the primary production of those same elements and minerals. That's going to land very squarely in the US around questions of permit reform. If we're going to do that here, we're going to have to build a bunch of refineries. We're going to have to open a lot of mines. The permitting around that is really difficult. It's really difficult. And there's nothing easy about that either. So to your beginning point, the domestic provisions are going to be tough. And that's going to drive international cooperation. Personally, I do not see the United States just cutting off China at the umbilical, like no, like if we do that, we're not going to spend the IRA. If we do that, we're not going to deploy at speed. But at the same time, people are going to try to do this like improv comedy. It's a yes and. Yes, we're going to do China and we need to have less reliance on this one supply chain. We have to expand the refinery base. We have to expand the supply base. We have to put together more trade agreements, whether that's with Bolivia or Chile or the People's Republic of Congo or Indonesia. One of the interesting things we've seen and I love this, this makes me so happy, companies like Ford are just going straight after it. So Ford cut its own deal with Indonesia and said “Hey, you guys are going to supply the critical materials for our battery supply chains. We love that.” And so basically, Ford's put together its own trade deal around these critical materials. And I think we're going to see some of those kinds of things, too. And individual companies will start building their own resilient supply chains because they can't afford to be cut out of

anything. They have to have the batteries. They have to have the clean aluminum. They have to have whatever they need.

BV: [00:20:09] It's very interesting. To maybe take this in a different direction and think this is a topic that, you know, certainly we've spoken with you about at length and your team, maybe pivoting from what you described and think this is a good transition from what you described as individual companies doing to us as individual investors. You know, how do we think about incorporating the benefits of the IRA and particularly as private investors, as we think about investing over a 5 to 7 year horizon? How are you how are your teams incorporating IRA into your underwriting? How are you thinking about where you would incorporate that upside today and or maintaining that positive optionality in this environment where there might be some more execution uncertainty?

JF: [00:21:00] Right. So I can't speak broadly. My belief is that the IRA is durable policy. The bipartisan infrastructure law is durable policy. The Chips Act is durable policy. But the same thing is true for the EU Fit for 55 package. Right? And so most investors that I have seen are treating those things as durable policies. So they're like, we can make money in this existing landscape. They might hedge against the risk of policy change and stuff, but they're proceeding as if that's the case. They are also seeking policy upside. They're trying to find ways to amend the existing statutes or seek additional opportunities so that their margins grow better. So one example of this is the 45 Q tax credit in the IRA. Right now there is a gap of about $25 between using CO2 from direct air capture and storing it or taking CO2 from direct air capture and using it to say, make a fuel or to make concrete. That $25 gap is big enough. People are like “Hey, we won't be able to get the CO2 supply we need to do our concrete project or to do our fuels project with that gap.” They are talking to members of Congress to try to amend that provision so that gap goes away for non enhanced oil recovery applications. Well, great. That's political upside if that happens and that's financial upside if that happens. But people are still proceeding with the existing policy and saying we can make money this way, let's do what we can. And the same thing would be true for many of the other provisions. The same thing is true if the European Commission changes aspects of Fit for 55 that will, say, allow corn ethanol to be a sustainable aviation fuel, then suddenly the corn ethanol people can make a lot more money. So the investors are looking at this and saying, I think we know how to make money now. There is a downside risk that we need to manage, but if the policy moves in a favorable direction, we'll all do a lot better. And so the risk associated with investing in a project is minimal. The challenge that they're facing here, though, is really the risk of delay. Because these rules aren't set or they're changing, there's a risk that the permitting goes slow, that the supply chains get extended, the workforce doesn't materialize, and that because of that, the workforce costs go up. So they're they're really worried about cost increases. They're worried about project delays. So these policy tailwinds are awesome, but the policy tailwinds don't resolve the choke points in the system either. So until those choke points get resolved, whether they are permitting or workforce or infrastructure, there's a limit to how quickly we'll be able to go.

BV: [00:24:04] Yeah. Now we're hearing much of the same in terms of, you know, underwriting to what they can see and what where we are today with optionality to the upside. Conscious of the delays and then thinking

about potentially new business models that might emerge as a result of wanting to track things like domestic content or wanting to create markets around credits. That might be further out, though, from where we are today.

JF: [00:24:33] And I will reiterate again the bipartisan infrastructure law, the Chips Act, the conventional appropriations every year, the amendments to the 2020 Energy Policy Act, like these are also important legislation. The IRA is the biggest, and it's the thing that will get the most money off the sidelines and into the field. But those other policy measures are also hugely important and will greatly help speed the deployment of clean energy in the United States.

BV: [00:25:07] Well, on that note, I wanted to leave it with maybe an open question for you and happy to go in any direction you'd like. What makes you most hopeful today as you look at the efforts across the field to try and make change at scale?

JF: [00:25:21] For most of my career in clean energy and carbon and climate, we have not had the technology we needed. We have not had market market-aligning policy and we have not had serious investors. Now we have all three of those. We've had 20 years of technology development. We've had a lot of market-aligning policy and that has brought serious investors into the field. So we've gone from a billion here, a billion there to now hundreds of billions in the United States, $1.7 trillion around the world. Things like the IRA make it possible to greatly increase that further, because the sad fact is we need more like $3 trillion of global investment to get there. And so I'm excited about the fact that we have everything we need. The challenges and choke points I talked about around workforce take time to fix, but we can fix that, around infrastructure it takes time to fix, but we can fix that too. This is why there's so much attention on permitting reform, because if we can do that, we're off to the races and that's going to be really hard. But that's like the last lock in the tumbler to unlock the many trillions we need. So I'm excited because we have pretty much everything we need. I'm excited because this is a trending topic. Five years ago, climate was like “uh” a clean energy was like “uh”. Now it's the hottest ticket in town. Uh, last week there was a headline in the New York Times saying that New York Climate Week was like Burning Man for climate geeks. Like that is such an incredible change from what it was five years ago. So I wake up every day with my glass three-quarters full, excited about the future, excited about the opportunities to clean our air and oceans, to create wealth, to grow new industries. Like I'm just excited about that every day.

BV: [00:27:21] Well, thank you, Julio. You are leaving me even more excited than at the start of this podcast. So I really appreciate you joining us.

JF: [00:27:27] My pleasure. Thank you. One last thing. Anybody who wants to follow up, Carbon Direct has written up a summary of the IRA provisions. You can go to our website and find it there.

MY: [00:27:41] It's really an interesting concept when you think about the scope of passing climate policy through tax policy. This follow-up episode was timely given this new guidance marks the end of the first phase of the Treasury Department's implementation of the IRA's clean energy provisions. It was really great to have you both join me again with an update on the progress made to date, particularly as it relates to the investor community. To listen to our last episode on IRA Building to Zero Inflation Reduction Act a platform for growth, visit us at www.stepstonegroup.com. RPM is available on Apple Podcasts, Spotify, Stitcher and other podcast platforms.