>> And now please welcome the Panel Energy Transitions to the New Green Economy. Our moderator, Andreas Klasen, professor and honorary research associate Oxford University and our panelist, Kyle Clark, CEO Beta Technologies. Dr. Raj Dasgupta, CEO Electrovaya, Jason Few, CEO, Fuel Cell Energy. Aman Joshi Chief Commercial Officer, Bloom Energy. And Christine Kamil Head of US Public Sector Coverage, JP Morgan.

>> Yeah, we're good.

>> Good afternoon ladies and gentlemen. I would like to say a very warm welcome to our next panel, which is about energy transition and the new green economy. First of all, of course I have to thank Chair Louis and the whole EXIM Bank team for inviting us to have this panel discussion today. And of course happy birthday, US Accent Bank, 90 years. That's absolutely fantastic. So what we will discuss for the next 40 minutes is about the importance of the green transition and then we will focus on the importance of financing and of course, in particular, why export credit agencies and export input bank in particular US EXIM are key players for a just green transition. And I'm delighted to introduce a fantastic panel the afternoon. I would like to start with Kyle Clark sitting next to me, the founder and CEO of Beta Technologies. You have seen that maybe outside what they do, it's an electric aerospace company developing vertical takeoff and landing aircraft and supporting charging infrastructure. Welcome Kyle. Good to have you. We have Dr. Raj Dasgupta, the CEO of Electrovaya Electrovaya an innovative leader in global energy transformation, supplying safe and longlasting lithium ion batteries. Warm welcome is as well. Raj, great to have you. Jason Few the CEO of fuel cell energy, of course, a leader in manufacturing stationary fuel cell platforms for decarbonizing power and producing hydrogen through fuel cell energy platforms. Welcome Aman Joshi, chief Commercial officer at Bloom Energy. Bloom Energy is developing solid oxide technology, converting natural gas or hydrogen into electricity with low or no CO2 emission. But Aman, I have to say you are pretty new at Bloom. You worked for more than 22 years for GE before and last, but definitely not least. I see. And say hello to Christine Kamil, head of US Public Sector coverage at JP Morgan. And I think there is no need to introduce JP Morgan as a company, but of course to introduce you. So as I said, the first round of of our discussion is about the importance of the green transition. And Kyle, maybe I I kick off with you. Beta Technologies is known for for pioneering efforts in electric aviation. And can you give us a bit of your perspective on how the, the green transition is shaping the future of the aviation industry and of course what role electrifying plays in this transformation?

>> Yeah, absolutely. First of all, it's awesome to be here and just a wonderful setup, awesome people and already had a number of really neat conversation, so thanks for having us. So Kyle Clark, founder, CEO of Beta Technologies. We are an electric aerospace company and I think as everybody knows, almost every form of transportation has gone electric and, and it's, it's aviation's turn and a lot of people are actually quite surprised that that's even physically possible. And so as a company, our first task was to go out to prove it was possible. And a few years ago we set the world record for the longest battery electric flight. We catalyzed that into more believers. We started doing operational flights, we get the military engaged. UPS ordered a bunch of vehicles and, and, and really behind the scenes our, our company is mission driven to help turn the corner of climate change on our particular front. And we think it's actually a very important front for the following reason, aviation, it makes up 9% of global carbon emissions. It's actually about twice that in total warming because it happens at high altitudes predominantly. And it's the fastest growing segment of emissions right now. It's a fast growing sector and it's the one that's not electrifying fast enough. So we're going to do something about it. And so we are making a significant dent in regional air mobility over the next five years and over the next decade stuff that's gonna be transitioning across the country. And hopefully by 2050 we're gonna be replacing most all primary routes of aviation with electric aviation that is charged and and and powered by renewable energy. And we're well on our way right now and we'll talk about that I think a little more in a second.

>> Absolutely. Thank you very much. Very exciting. As a former Airbus person, I don't know if I can share that with you here in the Boeing country. I'm, I'm very excited about what you do and I think that's absolutely fantastic regarding the, the developments we see in the, in the aviation sector. Raj, if I, if I think about technology required in, in a lot of different areas, I mean battery technology and you as a leader in battery technology, I mean, what are the most critical advancements from your point of view regarding battery technology? If, if, if we look at what is needed to support the green transition and if I may add another aspect, why manufacture in the us?

>> Well, great question and first of all, thanks for EXIM for inviting Electrify to be here. We're, we're delighted to be here in Washington and meet such great folks, but batteries are the center of the electrification efforts, whether it's aircraft, cars, energy storage, or any heavy duty vehicle that is being electrified. And currently it's well understood that the dominant player, both on a capacity standpoint and on a technology standpoint is China. And in order to, this is such a strategically important space, in order to compete, you have to first of all build the capacity and second of all exceed the technology that your competitors are doing. And I think we are well placed to be in that position. In the US the IRA legislation was critical to bringing upon a lot of domestic manufacturing efforts, including ours. And that is leveling the playing field. I I, I don't know the number of battery plants that are being built in the US right now, but it's tremendous on the technology standpoint there. That is probably more important though, and cur, there's no point building capacity to, to make the same thing that is being made elsewhere. You need to take it a step above and that's what we're very focused on. We're making a lithium-ion battery. That's different. It lasts longer in terms of life, it has significantly better safety. We're also working on solid state batteries to leverage our tech ceramic separator technology. So our, our goal is to become a key player for the heavy duty sector just as a us as a company for vehicles that are operating 24 7 which have a high carbon emission relative to even your passenger vehicles. And we believe we're making a good dent in that. But the technology aspect is, is something that we continue to remain focused on.

>> Excellent, thank you. Technology aspect of course. Also speaking about supply and demand in different areas. Jason, if we move towards your, your key strength and what you do in hydrogen, I mean what is fuel cells view on supply and demand regarding hydrogen? And of course also is there an opportunity how the US can accelerate the manufacturing expansion by supporting global projects in the area?

>> Thank you for that question and good afternoon everyone. I really want to thank Chair Lewis and the whole EXIM team for having us. For those of you that may not be familiar with fuel cell energy, we are a manufacturing company. We manufacture stationary fuel cell energy platforms. Our core business is we do energy delivery and emissions management. And we do that really two ways by decarbonizing power in industry and producing hydrogen. So as you think about the supply chain and the imbalance between demand and supply, you know, we, we start with this opportunity around hydrogen and a lot of people tend to believe that hydrogen is new. This is something new, it's the most abundant molecule we have on the earth. For those you that may not know this, your body itself, the atoms made up about 73% between hydrogen and and and carbon. So, and it is an an element that has been around and has been critical to helping support the advancement of life. So everything from the natural gas to oil to plastics to all the things that we use today, hydrocarbons play a critical role in that. And we see hydrogen evolving into new spaces, right? Today there's already 90 plus million metric tons or in the US that's about 99 million tons of hydrogen that's used every day. But you just talked, you know, you heard about it being used now for transportation, it being used as a replacement to, or in addition to blending with natural gas. And so we think those all create an opportunity to really drive the hydrogen economy. The things that's really impacting the demand side of it in terms of these new uses of hydrogen really sit around finding partners or other policies or, or, or things that help support the adoption and

longer term commitments. 'cause these are infrastructure projects by and large, they get built to support this. Today our company, we have an infrastructure project that we built at the Port of Long Beach where we have a 20 year agreement with Toyota to take the hydrogen that we're producing that is critically needed in order to really drive the adoption. So things like the IRA and the infrastructure package are, are really helpful and you have similar policies around the world that are also helping to drive adoption of, of hydrogen as a key component in the energy transition.

>> Thank you. Very, very impressive as well. And I think it's, it's absolutely fantastic and exciting to see the different areas, what you do and how innovative that is. Aman, I I think that the same applies of course for Bloom energy being at the forefront of, of clean energy solutions in your area. Could you just briefly tell us as well, I mean what's the unique combination of euro cutting edge technology with high efficiencies, solid oxide fuels and the electrolyzer cells?

>> Yeah, thank you. And first thanks to the EXIM team for inviting us. Look, when you think about Bloom energy, obviously our, our technology was invented by our founder chairman Krider, which is a solid oxide fuel cell. And you know, we've been around and a lot of people think of fuel cell and think of subscale. Lemme tell you, Bloom right now in power generation has 1.3 gigawatt of fuel cells already deployed. Now that 1.3 gigawatt took first 15 years to scale up because really the technology has evolved from being watts to kilowatts to megawatts to tens of megawatts to now the announcements that you'll start seeing this year and, and quite frankly that we are making, we're talking block sizes of 50 to a hundred megawatts that are getting deployed with fuel cell as a primary source of power generation. Now the differentiated aspects of our technology, we are actually a hydrogen based fuel cell. So if hydrogen is available, you can use hydrogen today in our fuel cell and that will create zero carbon, zero NOx, zero socks. 'cause we don't combust now tilt time that the hydrogen's available, you can also use natural gas or any blend there off of natural gas or hydrogen and get the lowest carbon footprint that exists versus other competing technologies which have been around like gas turbine or engine. Now the, now the other interesting differentiated aspect is it's the same platform. We also have a solid oxide based electrolyzer, right? And, and like Jason mentioned, you know, we can also use that electrolyzer to produce hydrogen. And recently, you know, our electrolyzer got tested at the Idaho National Labs and they've certified us to be the most efficient electrolyzer in the world. So for us in Bloom, it's all about scale and how do we scale up, right? The, the first 15 years took us to 1.3 gigawatt install base. The next two years we'll see our volume double up because that's just us executing on our backlog. So, so when you see the fuel cell technology progressing to progressing in power generation, I, I don't, I don't think people realize how fast the technology has matured in last 15 years in terms of being able to serve the customers and how the cost with that scale has also kept coming down in a very, very meaningful way.

>> Thank you very much. Thank you. I'm sitting next to an engineer and I have to be honest, I'm a professor of international business. I, I lead the innovation and knowledge hub at Oxford Smith School at the University of Oxford and we focus on public climate finance. So we talk in my, in my work a lot about like how to finance that. And I'm pretty happy that there is another person from the financing industry is Christine. And maybe my, my first question to you is not about how to finance what the other panelists do. Let me just very briefly ask you at JP Morgan, I, I mean the finance sector, financial sector plays such a crucial role in the green transition. How does a, a major bank like yours organize itself around the green economy?

>> Well thank you very much for having me and thank you to the EXIM team for inviting me to participate. I feel like the odd woman out on this panel because I'm not involved in a company that is creating new and exciting technology, but it's our job to help finance companies who are in this space. And I think the transition to the green economy presents two opportunities to affirm the size of

ours. The first is we need to continue to support our existing clients. All the large multinational corporations who are making cars and making steel and making toys and toothpaste, all of them are on a transition journey. And so we have to find a way to support them at the same time that we have all these new companies who are creating the technology and the innovation that are going to drive the development of not only their own businesses, but those of the established economy. So in order to address these two di dimensions, we have established a center for carbon transition at the firm, which is involved in advising existing clients on how to make that transition, how to transition their existing business to a a, a cleaner or a newer version. And that that center also looks at our own transition strategy. Secondly, we established a green economy banking team, which is got dedicated bankers who are focused on companies like the ones that are sitting here today who have much more of a technology background and who are able to support all of these new technologies as they're developed. And why is that important? I just wanted to share one statistic with the group. We estimate that there is a need for $5 trillion of investment over the next, each of the next 28 years and I want to get this right in order to drive this transition to net zero by 2050. So that's a lot of capital and if you wanna put it into perspective, that is basically 2.2 times the existing CapEx of the global large and mid-cap companies today. So just imagine the scale and the opportunity.

>> Thank you Christine. I think it's a very imp impressive number from the, I think it's from the International Energy Agency when we think about the prediction and of course JP Morgan's does a lot of research as well regarding the huge volumes required from both private and and public sources. Of course Kyle, and I think that's an, that's a perfect question for you regarding of course the global market for your technology, which is, which is there, but it's more like, I mean the financing mechanisms have to be there as well. And we can speak about private sector financing, we can speak about public private sector financing, but also we have to think to speak, I think about like different types of products for financing. So if we think about like development, about deployment of green technology, what type of innovative financing is required? It's not just like simple bank loans, it's not like simple insurance or I think it's much broader if we think about equity and mezzanine finance, et cetera. What is required to develop and to push your product? Yeah,

>> So so what we've established as an industry and as Beta that the product is desired, it works, it costs less to operate, it's more sustainable. People like that's all I need to know. I want some. And, and then, then they say, well how do I pay for it? Aircraft are big assets and and and the how do we pay for it is answered with is there a residual value? Can we extract some leasing mechanisms? Do we go to banks? And, and that residual value has to be proven in time and I don't think we can wait for statistical empirical data to show that we have to show it in a different way or come up with business models that expose it and cover it. And, and so one thing is somebody's, the EXIM bank stepped up as a leader in our industry through Beta to say we've done all of our diligence. We believe in you guys building aircraft and they helped us finance our production facility. Now the next step will be how do we finance the deployment of the aircraft? And what's interesting about aircraft is that most of the money is not made on the sale of the aircraft. So somebody here is way smarter than me. I'm a humdrum engineer. One of you guys is gonna figure out a way to say I can exactly quantify the lifecycle of batteries in aerospace and we're gonna work with smart guys like this guy to figure out how I can then monetize the renting or the leasing of aircraft and become the financer of the energy future of aviation. And and I think that there's some really like simple mechanisms to make sure that everybody wins in those scenarios, but it's gotta be thoughtfully plugged together. So that's the answer to my question. I got a lot of other answers, but that's the one that came to me as you were talking and so I was sitting next to these folks, but

>> It's an excellent, it's an excellent answer because of quite often if you think about like green innovation, we talk about very early stage, what we call pre-shipment financing, capital expenditure financing, working capital. But you,

what you basically highlight is that the post shipment, the buyer credits, the supplier credit financing. Yeah, it's unique. Is unique.

>> 'cause you get like in, in every startup business you've got like the friends and family, the venture capital, they need some growth capital, they need some institutional capital. Then maybe you go to a bank and then you're like, okay, I'm now supplementing my business with the bank and revenue and the revenue goes up, we pay back the bank and we start getting into a regular old business. But in, in big capital businesses, you need some mechanism to further support that. Yeah. And that's where I think the next innovation's

>> Gonna be. Brilliant, thank you. Very, very useful. Raj, of course the same applies for you regarding the financing of, of research and development. I mean that's key for technological advancement, but I could also ask you as a taxpayer if I want, I mean what are the benefits for my region? What are the benefits for the nation regarding this, this type of battery technology, manufacturing, if I give you public support. So what is the benefit?

>> So first of all, there's no better place to do research and development than the us. I mean it is the center of innovation, whether it's electric aircraft or AI or batteries. It is, it is the center point. And there is a reason for that. There is a good combination of research institutions, like for instance, we work with the University of Binghamton, we work with the New York Battery Energy Storage Consortium, which has, has mechanisms to fund research projects. But I would say the most important driver is the application. And here in this ecosystem you have innovative companies, whether they're companies like Amazon who's been around for a while and wants to use exciting new technology in their operations or startups like Beta who has an exciting new, new type of technology and new new product. And that driving that pull of demand on new cutting edge technologies is what makes companies like us develop something better, right? Someone said, Hey, can you make a battery that does X, Y and Z or Z? And and, and we can get that going. So that, that's the key driving for us, whether the government component or the the, with regards to financing research, that is also important. But it's this combination which leads to, to great things.

>> Excellent. Thank thank, thank you. So we, we just briefly discussed different types of financing with Kyle and then also the, the impact and the relevance for that Jason. I mean the same of course applies to you when we think about large scale development of, of fuel cell technology requiring significant investment. Do we have do to be broader regarding public investment? I do, we have to think more about grants, lower rate interest programs, what a lot of other countries do. And I'm not only talking about China, I'm also talking about European countries, the commission, et cetera. Is there more required regarding grants or maybe I don't like the word subsidy to be honest, but somehow supported interest rate programs? Yeah,

>> Look, I think it's, it's a tremendous time right now for the EXIM bank and then for very constructive policies like we talked about just a moment ago, like the IRA or the infrastructure program or you take a market like Korea with their clean hydrogen portfolio standard. Those are all things that help to seed a market. And as we go to this transition, I think that's really important to help drive adoption. I mean if you think about what Christine just said, you know, $5 trillion a year, right? Over the next 30 plus years, it took us 200 years for the industrial revolution and you're talking about spending more money than that in a 30 year window. So that's a lot of capital that has to be deployed, right? And so having programs that support that are really important. And you can do this on a very large scale. I mean, we just recently announced, you know, we're repowering what is the largest fuel cell park in the world in Korea, it's 58.8 megawatts. You know, that's, that's a, if you think about data centers today and what's happening with ai, right? 50 megawatt kind of blocks is, is what you're hearing these data centers that, that they need. And so this is technology that's been commercial for over 20 plus years that we've deployed in markets around the world. So where grants or low interest loans or other things come in is to really help as we talk about companies adopting technology that may we're

transitioning to use. So we talked about hydrogen, so both Bloom and fuel cell, we have solid oxide fuel cell technology to use electrolysis to take renewable energy and water and convert that to hydrogen. Well, even though that's been used in an industrial complex for many customers, that's a new use application. And so helping, you know, support that with the right kind of constructive capital structure is really important and makes the adoption that much easier. And especially when you're talking about, you know, an ability to look how you're gonna deploy $5 trillion in, in capital, you know, and, and being able to finance that at rates that make doing those deals, those infrastructure developments, economic, it's, it's a very important part of the, the equation.

>> Excellent. I Imani, I think a lot of what you just heard from your, from your fellow panelists sounds familiar to you and to Bloom energy, but I'm, I'm interested, are there the same financial challenges for you? Are there different financial challenges? And I think what also be put in be interesting is, is is the efficient use of capital something which is essential as well in addition to the different sources we have just discussed?

>> Absolutely. Look, Bloom would not be where it is without the capital structure support that various commercial banks in us offered with our 1.3 gigawatt of deployed assets, we've actually project finance $5 billion through commercial banks, predominantly in US and in Korea, which have been the two, you know, flagship markets for us, extremely critical as you go to customers who are looking to transition from whatever energy products that they were using to now more efficient decarbonized products, right? There is a element of financing. I can tell you it comes up in almost 99% of our deals because remember a lot of customers are used to signing up for just utility contracts. A lot of our solutions go behind the meter. So rather than pay for the CapEx upfront, they want to get it financed so that they're paying for these assets over time. So extremely critical. The the place where Bloom needs help is now we're starting to scale up in a big way in Europe, Australia, right? And so it is interesting that while the banking structure in US understands, has gotten their head round the reliability of our technology, they've seen the contract last a full lifecycle a term of 10, 15 years. But we are having to do same level of education work with other commercial banks in Europe and in Australia. It's almost like you're starting off right from, you know, zero base and having to teach them as to why this technology works, where the value proposition lies, why is it uniquely positioned to even be future proof as the world moves to hydrogen. And so extremely critical and, and, and I know we're gonna touch on EXIM, but we need tremendous support from EXIM because when I look forward for next, next four or five years, we have massive honest growth happening in Europe, right? And so, so without financing I don't think you can even introduce these clean technologies into the energy mix.

>> Thank you. And we focus particularly on the US EXIM in our next round of questions. But before Christine, if I think about JP Morgan, I mean you are one of the major players of financing sustainable projects and I'm pretty sure a lot what you just heard sounds very familiar to you. Could we broaden the picture a bit regarding the, the whole green transition and the, the financing opportunities and also the challenges and maybe also what are investors really looking for?

>> Sure. Well, happy to, and I mean we are a small player in this new space because inherently we, many large banks are very conservative lenders. And I think that financing in your, for your companies is, is challenging because many traditional lenders are quite conservative. You know, they're looking for, you know, your business plans, your offtake agreements, your your future plans and, and these things may not be readily visible on day one. And so a lot of my colleagues in the green economy space refer to this sort of, it's called the Valley of Death. I don't know if that's a concept you're familiar with, but it is a sort of this point between the, the place where you have de-risked the technology, you know, the technology works, but you haven't, you're not yet commercial, you haven't been able to commercialize the technology and so it requires, you know, a little bit of risk taking. So that being said, we

ourselves have financed or, or have raised, I wouldn't say financed, we have raised either through equity or debt, $5 billion for about 15 companies in this particular space. And overall the clean tech investment has reached about $156 billion. And that's as of November last year. So that's a very small, that's a big number, but it's a small number relative to the 5 trillion that I mentioned. And therefore it seems appropriate and extremely catalytic for the public sector to step in and provide financing, provide some long term patient capital in order to support companies and get them off the ground. So we reckon there will be 20 to 30% of the, of the funding required will come from the public sector, either in the form of grants or loans or tax incentives. Then there will be another chunk of financing coming from equity only at the very end of the cycle when companies are perceived to have a little bit more of a tangible business plan, the debt investors will step in for about the last 35%. So therefore I think that make More in America program is a great example of a, of a welcome and necessary government support that can throw a lifeline to these companies to get them to the point where they become more generally bankable by the broader financial community. Yeah,

>> Tha thanks and I think it's very useful to, to hear what you say about like this bridge to bankability regarding the combination of, of the different instruments and it's really the role of an of an X-M-R-E-C-A, it's, it's, it's an, an additional instrument about crowding in and it's not the discussion regarding competition between private and public. My question is a follow up to you, Christine, if I think about what US EXIM does, and we heard this morning from regarding the support and the importance of, of green financing. But on the other hand, as you know, a lot of export credit agencies around the globe are very, very strong and boosting their product portfolio. And I think about, for example, a hundred percent buyer credit guarantee from EKN and Sweden. I think about what iffo in Denmark does regarding the very broad portfolio. I'm thinking about a new project from the Spanish ECA who just introduced a foreign direct investment guarantee, not only for political risk, but for 80% of the commercial risk as well, which is unique in the ECA world. So my question is, what improvements to EXIMs current product offering will be required from your point of view, if it would be Christmas today and you would have a big wish to use EXIM for the industry, what would that be?

>> Okay, well I would say easy. That's easy. I would say more, more and faster. So I think we, we wanted see more dollars more quickly coming out of the system, taking a little bit more risk and I don't think that would be a surprise to any of my, any of my regular counterparts at EXIM to know that they, I know that they would like to take more risk and they would like to be more impactful and they would like to do it faster. So those are the, those are the key items that I see on my agenda. But I am sure that this crowd here has a much better wishlist than I would have.

>> Yeah, that's fine. But it's good. So it's more, more in faster. And I'm pretty sure that the fantastic EXIM staff here in the room is, is listening carefully, Aman, but also, I mean in a positive way. Could you give us a very brief example why and how US EXIM support made a difference for you?

>> Oh, oh, absolutely. Look, we are a proud American company. Our technology is export control. As we've started to scale up international markets, the first question that we get from these countries is, can you localize and package here? And we wanna stay American, right? And, and look, the interesting thing in our space is we are seeing various segmentation of customers, right? You have industrials who want to decarbonize wherein the, the power block may be somewhere between five to 10 megawatts. You have data centers who could be fitting between 25 to 50 megawatts, and then you have munis and utilities who are also coming to us and saying, Hey, we wanna put this thing in places where there is massive congestion, we don't have an ability to decarbonize. And that's power blocks of 50 to 200 megawatts, right? And so for Bloom in the next growth chapter, we need very strong EXIM support and we had some really good meetings and encouraging meetings with the EXIM team because as we go into these international markets, that's the first question that a lot of our utilities and

Munis are asking us, Hey, do you have US EXIM backing you up in terms of enabling them to be able to procure these new advanced technologies? Yeah,

>> Thank you. That's useful. Yeah. Christine,

>> Can I, can I just add something to that? I think that's a very important point because the, the presence of the government funding in any one of these companies is already catalyzing other investors to come in. There's a, there's an implicit stamp of approval that the diligence has been thorough, that the, the project itself has been well vetted. And so I think that's a really important catalyzer

>> Thank you, Christina. I think the signaling effect you're just describing, that's exactly what we need regarding the public intervention. Jason, are there any specifics regarding hydrogen? I mean, there's a lot of discussion around the globe also regarding support from EXIMs and ECAs. What, what is the particular importance of, of US EXIM for your work, for your projects?

>> Well, I think, you know, just to, to add to, to what's been said, I think, you know, EXIM has a wonderful opportunity to really make programs like the IRA serve as a multiplier effect. And so if I just take one aspect of IRA, which is a big part about onshoring manufacturing here in the us we are a US based manufacturer. We've been around for 59 years. We, we want to continue to manufacture here in the United States. And we think that companies in the fuel cell space in the US have some unique capabilities that are absolutely exportable to the world market as a company. You know, our purpose is all around enabling the world empowered by clean energy. And so to live our purpose, that means we have to be able to deploy our technology to every corner of the globe. And EXIM can really help us do that, and they can help us do that as a US-based manufacturer to be able to have, to have the support that we need to invest in the manufacturing, to have the support that's needed when we're talking to customers around the world to know that EXIM is, is supportive of, of what we're doing in and of our technology. Look, we've de-risked the technology. We've been selling it to the market for more than 20 plus years, like I said, and, you know, so EXIM you know, can really become this multiplier to the IRA by ensuring that the capital is there so that US innovation gets deployed around the world.

>> I I'm very grateful that you're giving me as an, as an academic, a lot of practical evidence regarding our theoretical concepts of additionality and crowding in and bridging bankability. And there is another big, big discussion, Raj, if, if we think about like why is this so important? It's not about like subsidizing, it's not about like, because the US or other gov governments think it is important. I mean, it's really about level the playing field. I think we sometimes tend to forget that it's not that we are thinking about great give, give these companies a lot of money. It's about like that a company should win a project because of the best product, the best price, and then of course a competitive financing. And as we know, a lot of companies around the globe have government support. So we have to level the playing field. I mean, that's the idea behind international rules and regulations like the OCD arrangement. So I'm not doing a lecture here, ruach, but I'm having a question for you. My question for you is, I mean, is that important to you to win context in the international global environment that you have the EXIM support because the others, your competitors have the support as well. How important is that regarding winning a project?

>> Yeah, I think it's, it's extremely important and I think the idea of a multiplier is a great example, right? Because that multiplier, you know, in our case we are seeing a lot of demand for our technology in Japan. For instance, we have Toyota Material industries as a customer, we have a few other Japanese OEMs as customers, and we will be exporting batteries, lithium ion batteries from the US to Japan. For those who don't know the history of this lithium-ion batteries are typically imported from Japan, right? So we are changing that dynamic. The, the impact of EXIM is critical both in supporting some of those exports, but also in financing the manufacturing capacity at home to do that, right? So it is

that multiplier with financing, manufacturing with the IRA incentives as well that really makes a, a robust base to go global. And that's precisely what we're doing and the demand side is coming from, from what we offer, which is on the technology side. So it's a combination of every, everything and it seems to look like it could work very well.

>> Thank you, rich. Karl, my first question on this panel was for you, and my last question is for you as well and, and you briefly discussed the financing needs, et cetera. So my last question really is, is about Beta technologies and what additional US support would really help you and further push your success in business development and competition in the global markets? Yeah,

>> I, if you don't mind, I'm just gonna react to the lifeline of course. Comment a minute ago. I don't think anybody's showing throwing any lifelines to any companies. If you can't swim on your own, you probably don't deserve to get pulled up in a tow rope and go wire skiing. That's, that's what we're doing here, right? You've, and, and the, the EXIM bank, in terms of the color of financing, there's a lot of venture capital that responds to a flashy, sizzly, interesting market and lurches at it. And you mentioned something else, so it was really important was a depth of validation and diligence. It's not just signaling to people and saying, Hey, deep diligence was done over the course of a year with sophisticated, knowledgeable people from the EXIM bank, getting deep into your shorts and understanding actually from personal experience, significantly deeper than any venture capitals, any growth fund, any, any private equity. It's not just a signal. It it works because it's true. And when we've gone on to talk to other financiers and they're like, oh, EXIM Bank commissioned them and them and them to study that and the results were what? Yeah, we're in. So it it, it actually allowed a business like ours, which I believe is the future of aerospace in the entire world, to maintain its presence and growth in America because it looked past the sizzly interestingness and got deep into the business. So, so that's one. So that threads to the answer to your question, which is what did EXIM bank do for the entire aerospace industry? It saved the aerospace industry in the United, in the United States, it either many industries that slipped through our fingers. Beta was my senior thesis at Harvard 22 years ago, and I worked like hell to get everybody to try and pay attention to. It finally got a little traction and it would've been a real shame if the only way the business got a lifeline was to take a left turn and head off somewhere else and start supplying things from elsewhere. We're able to do our manufacturing here. We've got 700 people now. We're gonna double that very shortly. And we're, we have now become the leader of this whole industry, actually serving all the other American, they're key technology now and while building our own. So it's, it's done wonders I think, for the whole industry and, and it was a really insightful move.

>> Thank you. Energy transition, the new green economy. That was our panel. Thank you so much for a fantastic discussion and again, happy birthday US EXIM. Excellent, excellent. Thank you, thank

>> You, thank you.

>> Please welcome to the podium, Enoh Ebong, Director, US Trade and Development Agency.

>> Good afternoon. Good afternoon everyone. It is such a pleasure to return again to EXIMs annual conference. I want to thank my good friend, president and chair Reta Jo Lewis, and the fantastic EXIM team for convening this premier event and for inviting me to speak with you today. A few moments ago, we listened to a really enlightening conversation in which innovation stood out as a common theme, both in terms of technology and financing options to advance the green transition. I'd like to add to this conversation by giving some visibility to how a whole of government approach can complement the extraordinary innovation of our private sector. Before we can count on EXIM financing or any financing for that matter, we must first complete the necessary legwork of project preparation. Consider the following. US green technologies are finding a

home in many of the most dynamic infrastructure projects in emerging economies. In many cases, these countries are hardest hit by the impacts of climate change, but they also have the greatest opportunity to benefit from technical and financial solutions that the United States can offer For more than 30 years. USTDA has formed partnerships to help mobilize capital and bring us innovation to infrastructure priorities in emerging economies. Because our work is focused on project preparation, specifically providing grant funding for feasibility studies, assistance, and pilot projects, USTDA plays a critical role in defining how infrastructure projects are planned and built. To borrow a term, USTDA builds a bridge to bankability for the green transition. I want to give an example of this and, and this example sort of speaks to the risk taking that was mentioned on the panel. So this example comes with a technology, A technology that is, is not yet commercial and it is focused in Romania where USTDA provided grant-based technical assistance to identify technology options for what will be the country's first small modular reactor nuclear power plant. Our assistance led to Romania selection of technology from Oregon based nuclear new scale power. This critical milestone was the impetus for USTDA to fund the project's front end engineering design study in October, 2022. Along with contributions from the US Department of State, the government of Romania, and new scale power USTDA studies were the catalyst then for EXIM bank and the development finance corporation to take action. And in May of 2023, EXIM and the DFC issued letters of interest for potential support of up to 3 billion and $1 billion respectively for project deployment. It's important to note in this context that our US Department of state is working on the enabling environment for these activities through its first initiative. State is building capacity to deepen strategic ties, support, clean energy, innovation, and advanced technical collaboration with partner nations on secure, safe, and responsible use of nuclear energy infrastructure. So this is just one example, but as a government, we are taking holistic approaches to supporting infrastructure projects overseas. We have to continue to partner amongst ourselves and we u with US industry on these shared priorities. As the US government's project preparation agency, USTDA is committed to seeing our projects implemented. So we are also focused on the second question of this panel, which was innovations in financing. And we are focused on exploring how we can bring innovative financing to our projects. So working with our global partners, USTDA is exploring ways to introduce sustainable financing instruments that are currently being used for projects in high income countries. We are also generating successful local currency denominated transactions in places like Nigeria. And we are attracting sustainability focused institutional investors with trillions of dollars of in assets under management to emerging economies. This includes working with members of the investor leadership network to build a pipeline of bankable clean energy and critical mineral projects in emerging economies. EXIMs role is central to all that we do, and this annual conference is a perfect venue for convening partners who are committed to advancing the green transition using US technology. It's also an important opportunity to listen to your ideas and plan new ways forward. So I'd like to close with an ask. Please join USTDA and our many sister agencies in the government to business networking session. Let's explore how we can work together to help your businesses grow and to bring your projects to fruition. Thank you.