

**Unknown Speaker** -Ladies and Gentlemen please welcome our next panel the role of nuclear energy exports in advancing US interests and Leadership our moderator Maria Korsnick, President and CEO, Nuclear Energy Institute, Co-Chair, EXIM Council on Climate and she's joined by Margaret Cosentino, Executive Vice President, Westinghouse, Chuck Goodnight, Vice President, NuScale, Roger Martella, Chief Sustainability Officer, GE and Ambassador Geoffrey Pyatt, Assistant Secretary of State for Energy Resources.

**Maria Korsnick** -Well good morning can you guys hear me well good morning and uh Welcome to our discussion on another green energy topic clean nuclear energy I have over 35 years of experience in the commercial nuclear industry um my name is Maria Korsnick I'm the chief nuclear off chief executive officer and President for the nuclear energy Institute and in my 35 years uh from an engineer to a licensed operator in the control room ultimately to a chief nuclear officer where I was responsible for five reactors at three locations the time for commercial nuclear has never been brighter and I have some wonderful panelists uh with me today to talk about why that is and it's a combination of the interest in the climate as well as energy security and with some of the geopolitical issues that are playing out in the world today how commercial nuclear energy also plays into that picture because nuclear energy brings energy security and energy security is National Security with that I'd like to kick off our panel today and I'm going to begin with Ambassador Pyatt um Mr. Ambassador in your diplomatic career you've been at the center of some of the most consequential US nuclear energy initiatives now as assistant Secretary of State for energy resources how does today's Global nuclear energy market look from your perspectives in terms of opportunities and risks that you see for the us and our national interests.

**Ambassador Geoffrey Pyatt, Assistant Secretary of State for Energy Resources** - Well thank you for the question thanks to EXIM for having me and let me start by just foot stomping the point you made in your opening which is this is a moment of unique opportunity and Incredibly exciting time to be working on these issues because you've got several phenomena coming together one you alluded to on the demand side and that is the climate crisis and the urgent requirement to develop an energy system which delivers the power that the world needs in a way that is more sustainable from a climate standpoint nuclear is a critical aspect of that um and then I think the other side is on the supply side it's the technology it's the transformation that's happening in terms of new engineering SMR Concepts um passive safety I worked on some of these issues I guess at this point 20 years ago when I was at the IAA in Vienna um during what we thought was the nuclear Renaissance and then Fukushima happened and things slowed down dramatically um I'm just back today from an incredibly rich two days of discussions with our Japanese Partners in Silicon Valley uh the US Japan energy security dialogue um the cooperation between our two countries was a central element

of that conversation and I think that reflects what's happening in my conversations around the world which is a very strong focus on how we develop uh these new opportunities um how we do so jointly with partners because the United States can't do this alone and so these kinds of alliances that we have working with Europe in Romania where we've been had tremendous support from EXIM for instance um let me finish up by just noting um you asked about risk factors I think there are two that we have to have front of mind um one is Russia and all of the issues around especially uh nuclear fuel supply as the G7 we are committed to phase out our Reliance on Russian energy of all sorts and um I live through some of this as we worked with Westinghouse um to replace uh Ukraine's uh fuel assemblies with Westinghouse fuel assemblies instead of Ross Adams for instance and then the other is China and the fact that in this sector as in so many others of the energy transition uh China has been working very hard especially over the past decade to develop a leading position and so it becomes even more important that we work with partners and allies to develop an alternative that we can use not just for our own domestic requirements but as an offering to our partners and allies around the world

**Maria Korsnick** -Thank you and you mentioned uh Westinghouse Margaret um I'm going to come to you next and uh just appreciate we all heard about a recent engineering uh contract I think that was signed in Poland but Westinghouse is doing um many things uh and so I guess just maybe give us a little uh Peak inside uh all that's going on from a nuclear perspective at Westinghouse and like what are you looking to export perhaps in the near term but then also um what do you see as the competition in today's market.

**Margaret Cosentino** - Sure um so at Westing house this is really for us once in generation set of market conditions and opportunity and really the conversation that's been going on for several years now around decarbonization the recognition that we're not going to get to Global Net Zero without a significant expansion of our Global nuclear capacity IA is saying double um doe of course is saying the same and perhaps even more so um we were seeing very favorable market conditions in man and then Russia invaded Ukraine and it added that lens of energy security and a really acute desire to get out of dependence not only on Russian natural gas but on Russian nuclear Fuel and so we're really seeing from a Market's perspective although the conversation is quite Global from a decarbonization perspective the energy security is really driving more near-term opportunities in particular um in Europe in UK and elsewhere both on the nuclear fuel side and on the new build side um we just delivered um fuel to Ukraine this summer it was a great partnership between us the US government the EU and our customers in Europe to drive and accelerate spacing Russian nuclear fuel into their VVR reactor Fleet across Europe um so that's a tremendous story and an example where nuclear can move fast right um and then on the new build side uh we're seeing similar

demand signals from those regions in particular Poland's such a great example um and I think it's really going to be a bell weather for the region in terms of new build the competition piece um obviously Russia and China are huge players in nuclear for us for the gigawatt scale new build deployment the competitors are largely Korea and France and this is why it's so important to have EXIM as part of our offering right because whether it's Russia China Korea or France we are competing against state-owned entities and so we really need EXIM and USDA and DFC to help us level the playing field where they don't have the same commercial considerations that we do in the private sector and bring together that full package the advocacy from the state department dealing the White House and Poland it's been you know really amazing bringing in the financing piece and then the advanced technology from the US side so right now um we have actually our customers in three countries have uh Lois with EXIM to look at new build and we have six more that are in progress too so there's such an incredible demand out there right now.

**Maria Korsnick** - That's fantastic um and really just want to take this moment to thank you um on behalf of uh the United States really for helping uh engineer the fuel for those Russian design reactors so that you could help Ukraine and that you are able to help some of these other countries that have a Russian style reactor but they don't want to do business with Russia and your team was able to re-engineer uh so that you could create a fuel supply for them so I think a lot of people understand and appreciate how challenging and difficult that is to do um but we really appreciate that you were able to offer that assistance so Chuck goodnight Chuck good night we're going to go to you next um so we've talked about sort of new things coming and in this pipeline of new things coming from a nuclear perspective some of these new things are getting smaller and you have a design the Voyager design tell us a little bit about that and how is that a game Chair for nuclear.

**Chuck Goodnight** - Thanks Maria I'd actually like to start with a moment to express my appreciation for being here with this particular panel as you mentioned in the beginning it's a new day in nuclear and it would not be possible to be where we are today here for all of us if not for Nei the US government Westinghouse and GE this group around me makes today possible in the nuclear arena with Decades of hard work and energy funding so thank all of you and your predecessors uh to your question Maria about what's coming and what's new scale is really very interesting to me I've only been in the in the company about a year but I've been in the industry almost 40 years and I found myself promoting new scale as a consultant before I came to the company and it was because of what I saw and what I saw was the ability to really have flexibility and scale so each individual module is 77 megawatts but they come in packs of four or six or 12 so the customer can decide am I replacing a small coal plant all the way up to am I really looking at a giga watt class reactor at 924 megawatts for our large

ones um but also importantly is each module has its own independent turbine generator train so that allows an individual operator to dedicate some of the energy to electricity or some of it to process heat in the form of steam so while we're using traditional pressurized water reactor standard traditional uh PWR fuel the approach of downsizing it increasing the safety case allowing us to have this flexibility of operations creates a whole new set of opportunities the other piece that's really interesting is our safety case is so robust that the NRC has approved uh potentially at a given site the ability to have the emergency planning zone at the fence line so traditionally that's been a 10 mile radius and that has excluded an awful lot of things being close to a nuclear as well as the Nimi kind of issue that most communities might have but if you go to the communities today that are near nuclear power uh generating sources they're very favorable it creates jobs and it adds to the infrastructure of the community it helps build those economies so new scale is really fortunate from our founder Jose Reyes uh to bring this miniaturization of nuclear to create a whole new set of opportunities uh globally and the challenge and Margaret just talked about this internationally the challenge that we all have is really competing with state-owned Enterprises and you know thanks again to the US government to help us go through that process but that creates a challenge in financing so when you look at nuclear it's still expensive it's still long term it's still a big investment and it's a long-term investment we've talked about this before in some cases it can be a hundred years and so when you look at that you go how do you fit into this and it takes all of the players it takes EXIM for help financing it takes external markets to help with financing it takes the government to help with one 123s and doe A10 agreements and all of those things so again we're fortunate today to be in a position to have all those players I think really well aligned and new scale now has a position to bring a new application of the old physics into a market that now has a great variety of demand uh in closing I would say that our CEO John Hopkins has a quote that I really believe in and he says I hope all of our competitors are successful and that's because the market is so wide and so deep and there's so many applications for clean resilient reliable energy from nuclear fishing that we can all be successful here so new scale is one of many that are here and we're just great grateful to be a part of the party.

**Maria Korsnick** -Excellent well thank you and the way that you described uh your technology where you can put four of something or six of something or 12 of something I think also speaks to the fact that you're able to also pair with wind and solar and as we look at nuclear in the future uh we really look at nuclear to sort of be that foundation it's always there seven days a week 24 hours a day um and then it can pair very nicely with the intermittent wind and solar and so um it's a it's nice that you guys have a design that that accentuates that Roger let's go to you next um so Rogers with GE Hitachi uh long been uh in the market uh from a nuclear perspective and now you're

talking about a small modular reactor I know you're very active in Canada as well as in Poland and interestingly enough in Poland you're teaming with a chemical um company which is a little different normally we think of nuclear being connected just to Electric utilities uh so tell us a little bit about what uh GE is up to.

**Roger Martella** - Maria, thank you very much and thank you to EXIM for the honor of including us on the stage with my colleagues here and this partnership I think you've heard this theme from all of us that when it comes to the energy transition and climate change we're really in an unprecedented transform transformative era of action for the first time in a long time the private sector and the public sector are working in Partnership as have been long overdue to move forward on action to innovate and install the technology we need to solve for energy security to solve for climate change and the partnership with EXIM The partnership with the state department with our stakeholders all around the world has really been unprecedented and with our colleagues at other companies and so perhaps no example of that is stronger than nuclear which is why I was so thankful to see this on the agenda today because two years ago I don't know that I would have been having this discussion we would have been kind of going along and doing fine but the world has fundamentally transformed for nuclear and it is now for a company that helps provide one-third of the world's energy Renewables gas and grid and hydrogen and carbon capture this is the number one topic of conversation it's the thing at the front of everyone's mind all around the world and we talked about the energy security reasons for that you've heard about that I would also add how much the policy Frameworks have been favorable for nuclear in the US we have the inflation reduction act the first climate change law and the infrastructure act which really reinforces the role of nuclear we have similar policies in the European Union the taxonomy we have Great Britain and we have great collaboration between the state department and the UAE and something called the pace agreement and the UAE promoting nuclear and something called Net Zero nuclear all these policies are lining up and at the same time this doesn't have to be just the US issue necessarily we are looking to see how can other countries help get Economic Development from small modular reactors how can they train the next generation of workforces how can they domesticate some of their supply how can they see economic opportunities from DISLO deploying small modular reactors so all of this is lining up with um 30 countries reaching out to us on six continents in partnership with the public sector just really an unprecedented amount of interest in small modular reactors and in terms of our technology our technology is a very interesting conversation because you have everybody here represented our technology is kind of a bit of a hybrid between the old engineering and what's to come we have something called the BWRZ and the X in that stands for 10 it's the 10th Generation of our boiling water reactions so it's an established technology something that we're very familiar with a majority boiling water

reactors all around the world license similar fuel uh similar infrastructure and what we're doing is we're we want to be the proof point for small modular reactors we want to show how you cannot design one for every facility but Design One for All facilities how you can have a common design how you can shrink it down how you can make it modular and repeat it everywhere around the world so Maria the partnership you talked about with us in Poland um in with the help of the state department with the help of EXIM in North America and other parts of the world what we're doing is we've decided to take this Global and have the whole world invested in innovating this technology so we can deploy it globally and what a better place to do that in than Eastern Europe Eastern Europe a heavily fossil fuel Department uh part of the world looking to decarbonize looking to promote energy security looking to set an example for the rest of Europe so there's a natural partnership here with us and our colleagues in Poland at synthons we appreciate that partnership but not just working with them working with Canada working with the us working with some other places in the world yet to come so we can prove this technology for the world and again this is only because of public private partnership EXIM has been absolutely critical to helping move this forwards a success going to Poland and reinforcing commitments offering to lend significant amount of money over seven different sites so that Poland can set the example for the rest of Eastern Europe for the rest of emerging economies for the rest of Europe that they can too benefit from the opportunities of nuclear small model reactors and all the benefits that come with that so we're very appreciative for that partnership.

**Maria Korsnick** - Excellent thank you and Margaret I didn't mean to overlook you in SMR technology uh I know you also have a design in that area so please also reflect for me again um from an export Market perspective as you look at the US what are we doing right and what are some things we could do better to really as you look ahead maybe cinch some additional deals maybe the Czech Republic uh I know that's an area that's interest uh for us and maybe build on the experience that you're having in Poland and also to help us rebuild with the Ukrainians.

**Margaret Cosentino**- Sure, so I think as it pertains to export Finance EXIM USDA DFC all have very important roles to play as enablers for the export of us technology uh when we think about the things that are going well and could be going better it's really I would sort of bucket it between funding and authorities and there are really three areas that I think are going to be um critical to um impactful as we're pursuing these new opportunities overseas first is around feed studies and we had this great example with Poland project um where USDA came together with State and doe to fund support the feed study in Poland which is critically important because it Dr risks the project and gives the customer confidence right but the way that the we had that approach was the exception it wasn't the norm of how we do things and so we really need to look at funding for USDA to increase to support more feed projects and support both large and

SMR projects um and so that's one piece and I think the whole government approach to it we need to sort of again sort of flip the equation and make that the norm and not the exception second would be around Equity tools um we're hearing from a lot of customers that they're very interested in seeing that partnership that skin in the game if you will and there's some authorities that exist already for the um Finance agencies to support um Equity type schematics around project Finance so I think that's also very important and then third is let's look at Poland as we've just been through this right how do we move fast we don't need to recreate the wheel each time um you know how do we staff up these agencies it's been a long time since we've deployed large nuclear small you at scale right and so given all the opportunities that are coming our way do we have enough people to support um all the work that's been coming into these agencies so we can replicate this move fast for Czech Republic or Bulgaria and everyone else down the line I think that's going to be really important I do want to say on Ukraine this is a very special case um we have a project that we signed with them before the war started um to look at new nuclear build um they are eager to move out now on that and there's a lot of work that gets done around engineering and procurement it takes a couple of years right before you even start um the project in breaking ground and I think for Ukraine they don't you know they're a country at War so they don't have the same maybe Financial profile that we would see in other countries to um really back up some of the financing schemes but it's a great project to help them get started so when the war is over they're ready to move out quickly and there's a lot of discussion about Ukraine recovery and deployment of clean energy infrastructure I can't think of a better project to help and support Ukraine as they look ahead to their recovery.

**Maria Korsnick** - Excellent I agree um and back to you Mr. Ambassador you talked about a lot of expanding nuclear here um now some of that is going to be in countries that have nuclear today some of it's going to be in countries that don't have nuclear today

**Ambassador Geoffrey Pyatt** - so how's the US government meeting these challenges as we talk about new to nuclear countries and helping stand up a nuclear Enterprise no thank you for the question and maybe start with a point that Roger made which is that we're really pursuing an all of the above strategy in terms of how we engage internationally on the Civil nuclear opportunities Roger talked about the partnership with Enoch and UAE for instance very important Margaret talked about Ukraine I mean clearly Ukraine is going to be one of the is going to remain one of Europe's Main nuclear countries going into the future and having talked a lot with for with energy Minister Henko very interested both in traditional reactor Technologies but also SMR opportunities as a mechanism to decalcify and to decarbonize their economy as fast as possible um the state department has the first program which is intended to help

countries lay the foundation especially to develop the capacity for these SMR Concepts as I look at the global map um Europe is going to be critically important because Europe is trying to fill a hole created by their decoupling from their former dependence on Russian energy supplies um but you also have to look at the developing world where there is so much growth in demand the IEA points out that most of the growth of in energy demand globally in the decades ahead is going to happen in Asia that is reflected in the enthusiasm we see for SMR Concepts working with our core allies to begin with Japan ja and Korea but also in in Southeast Asia discussed this with Thailand in Central Asia the Kazaks are very serious about SMR Concepts in Africa um I've talked to the Ganan energy Minister who is absolutely insistent that Ghana will be the first country in Africa to deploy an SMMR so we have an opportunity here to both accelerate the energy transition to meet our climate goals but also to maintain American industrial competitiveness and Leadership on a cutting edge technology um where we have not just the companies that are represented here but another half dozen others that all have compelling concepts for um Deployable and um economically viable um nuclear Concepts that will pay dividends out for decades and decades to come because that's the other aspect of this and we're we make this point for instance in our conversation with the Czech Republic a decision to go with an American nuclear partner is a decision that will endure for a half century so it's really important that we get this right and certainly for the US government the Biden Administration using all the levs of our diplomacy and our International engagement to make that successful.

**Maria Korsnick** - Thank you so much Mr. Ambassador I actually head to Ghana in a few weeks with our department of energy so yes I'll speak firsthand that they're absolutely interested uh in in new nuclear well that's all the time we have and it went by so very fast uh I want to end with a huge thank you to EXIM Bank thank you for helping us get commercial nuclear energy on the map uh from a geopolitical perspective and help us push back against the China and Russia deals uh that are out there and a huge thank you to my panelists let's continue the conversation and continue the great work with EXIM