

**SM91 | 10.15.2022****Winter is Coming | Episode 7**

Susan Sakmar, Visiting Professor, University of Houston, and Author of *Energy for the 21st Century: Opportunities and Challenges for Liquefied Natural Gas (LNG)*

**We welcome Susan Sakmar back into the SmarterMarkets™ studio. Susan is Visiting Professor at the University of Houston Law Center and author of *Energy for the 21st Century: Opportunities and Challenges for Liquefied Natural Gas (LNG)*.**

**SmarterMarkets™ host David Greely sits down with Susan to discuss how the European energy crisis is transforming the LNG industry.**

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**Susan Sakmar** (01s):

Nothing in energy is easy. It's all expensive to build. It's hard to get financed, and you do have ESG concerns. So to the extent developing countries might want coal, can they build it, can they get it financed? There's a million challenges, so you tend to see a lot of frenzied activity, and then we just go back to doing kind of what we can do. What can we actually get done?

**Announcer** (28s):

Welcome to SmarterMarkets, a weekly podcast featuring the icons and entrepreneurs of technology, commodities and finance, ranting on the inadequacies of our systems and riffing on ideas for how to solve them. Together we examine the questions, are we facing a crisis of information or a crisis of trust and will building smarter markets be the antidote?

**David Greely** (53s):

Welcome back to Winter is Coming on SmarterMarkets. I'm Dave Greely, Chief Economist at Abaxx Technologies. Our guest today is Susan Sakmar, Visiting Professor at the University of Houston Law Center and author of the book *Energy for the 21<sup>st</sup> Century: Opportunities and Challenges for LNG*. We'll be visiting with Susan to discuss how the European energy crisis is transforming the LNG industry. Hello Susan. Welcome back to SmarterMarkets.

**Susan Sakmar** (01m 21s):

Hi. Thank you David, it's great to be back.

**David Greely** (01m 24s):

Oh, it's so great to have you back. You know, last time you were here you were the host and I was the guest and I was really looking forward to this because I have so many questions that I've been wanting to ask you. You literally wrote the book on energy for the 21<sup>st</sup> century with the opportunities and challenges that would present for LNG and you know, those challenges and opportunities are really coming quickly. Europe is pulling LNG in from all over the world as it tries to make it through this coming winter and the US is now the leading exporter of LNG globally, and that's a huge change from just a year or two ago and I wanted to talk to you a bit about Gastech. You were there at Gastech last month in Milan and for the benefit of our listeners, I should say that Gastech is, you know, one of the biggest natural gas in LNG conferences of the year. I think something like 40,000 industry professionals attend over 750 companies and I was curious to ask you, you know, what was the mood among the natural gas and LNG industry at Gastech and are they perceiving the current situation as a temporary thing or more of a sea change for the industry?

**Susan Sakmar** (02m 33s):

Well you're quite right Gastech it might be probably the largest gathering of global gas industry folks and it's always a great event, sort of the highlight, one of the highlights of the gas year and the last time we had all met was in Dubai about a year ago and the Dubai event was the first event after COVID, so quite small much smaller than usual and I have to say this Gastech was sort of back to the old Gastech days. It was very large event, very large exhibition. The booths at Gastech I think were larger than I've seen in in a long time and I guess this is leading me to say, you know, the mood was very good at Gastech and I was a bit surprised because of course the headlines coming out of Europe can be quite dire.

**Susan Sakmar** (03m 24s):

And so I wasn't sure what I was going to find in Milan, but I would say the mood at Gastech was very good. Now of course, exporters have, you know, had their banner year this year, so of course the exporters were, were very happy, but even the importers, like Uniper, Uniper had a very big booth with a lot of activity going on in the booth and seemed to be taking it all in stride, even though Uniper sort of on the verge of being nationalized by the German government. So I would say the mood was good and the industry was pretty upbeat and optimistic with the exception of course of you know, developing countries have been hit very hard by this and we did hear from some of those representatives as well at Gastech.

**David Greely** (04m 09s):

Yeah, I mean I think that part is often lost and I'm glad that you're bringing it to the forefront and you're being to hear more stories about that, that it's fantastic that LNG has been able to come to the rescue in Europe, but that LNG came from somewhere and in many of the developing countries, it's come from what they would've taken and we're starting to hear about the blackouts and gas and power shortages and Bangladesh and other places. So, you know, I'm curious, like with the industry discussion, was there a lot of talk about how are we gonna increase the overall levels of LNG. Is there a mood to pick up the level of investment or is the environment still not good for that?

**Susan Sakmar** (04m 48s):

Well, you know, it's interesting. I suppose it depends on who you speak to. So there are still projects in the wings and I guess I'm more focused on US projects. One because I'm in the US and, and those that tends to be my network, but also those are the projects I think folks are I looking towards you know, certainly Qatar is bringing on more supply and doesn't quite have the financing challenges that some of the US LNG projects do. So I think people sure, if they have a project in the works, they still want to bring it online, you know, the mood is good. There's a sense that, you know, more supply is needed, but the price hasn't been good and the financing really hasn't been there. So, you know, it's a bit hard to say you hear a different story from banks.

**Susan Sakmar** (05m 36s):

There weren't, I didn't talk to a lot of bankers there. I did have one banker on one of my panels that I chaired and they're still being very reluctant to finance more oil and gas. So I think we'll know more maybe in the next six months what gets financed because of course a lot of deals have been made, but then the rubber meets the road when you talk to bankers and we'll see what gets financed. So I think it's a bit unclear, but everybody of course, optimistically wants their project to go forward and there's a sense that, you know, more supply will be coming online more from the US but at the end of the day it really always turns on what can get financed.

**David Greely** (06m 13s):

Yeah, I want to come back to some of those points with you cause I think they are so critical, but, you know, one thing I wanted to ask you first was I've heard that many of the discussions at Gastech involve the role of LNG and energy security as we try to make the energy transition and I think there's been a big swing of the pendulum, you know, from this focus on ESG, which is curtailed some of the dollars moving into the industry and the focus on energy responsibility from a climate perspective and the pendulum swinging back to energy security and affordability and this should increase the demand for natural gas as a transition fuel over that medium term and you think it would be encouraging, but do you think there's a risk that we over correct and end up, you know, the pendulum swings too far and pushes more of the demand on a longer term basis into things like coal and oil that you're upset of resort to in the short term?

**Susan Sakmar** (07m 07s):

Well, I think yes, I think there is that risk, especially from the developing countries you know, as you mentioned at many developing countries of faced power shortages and those countries also tend to have indigenous coal. So some of the big potential buyers of natural gas, you know, Pakistan, Vietnam, Bangladesh, Sri Lanka, other places around the developing world China and India are the two biggest buyers, two potentially biggest buyers of natural gas also have a lot of indigenous coal and so I think one risk with the high prices we've seen in the natural gas markets and just sort of this wild kind of frenzy is sure they might be looking towards more coal, especially since they have perhaps indigenous coal, they can still develop.

**David Greely** (07m 56s):

Oh, that's fascinating to, they really have to think about it from the perspective of those developing countries and is that where the coal ends up staying in the system longer term and maybe we don't get that Asian LNG demand pull back. That was such a feature of the market.

**Susan Sakmar** (08m 10s):

Well, you've seen, you know, and also not just coal, but nuclear, I mean, you're seeing a lot more focus on nuclear than we've seen in, you know, decades with Japan starting they're going to restart some of their reactors. So I think that'll be something that also grabs some more market share possibly. Now all, you know, the interesting, I mean what makes energy all forms of energy so interesting and dynamic is you have so many factors at play. So you tend to see people run towards something thinking it's, oh, that's gonna be the easy solution, but nothing in energy is easy. It's all expensive to build, it's expensive, you know, it's hard to get financed and you do have ESG concerns. So to the extent developing countries might want coal, can they build it, can they get it financed, there's, you know, a million challenges. So you tend to see a lot of frenzied activity and then we just go back to doing kind of what we can do, what can we actually get done.

**David Greely** (09m 08s):

Right yeah and, and as you said, one of the things getting done is, you know, turning back towards nuclear and you know, in Germany we've seen, you know, plants that were slated to be shut down, being kept open and it's kind of fascinating that nuclear is being considered more of a green fuel you know, its perception has changed and one thing I found really interesting to watch recently is, you know, I don't think the LNG industry has gotten the recognition it deserves from policy makers and the general public for basically acting as an energy lifeline this year to Europe, particularly following the Russian invasion of Ukraine and I was wondering if you think that perception still out there, you know, that the LNG industry isn't being seen for doing the important work it's been doing, and do you think that the perception of the industry among policy makers and the public might be changing right now?

**Susan Sakmar** (09m 58s):

Well, I think it's been right, I don't know that LNG was seen as a lifeline in part because of all of the other things that happened, right. I mean, LNG might have been seen as a lifeline if prices were reasonable, but prices got way outta control, right and so then nobody feels like, boy, this is a great product that's really saving lives. Instead, it always feels like, you know that from the consumer, you feel like you're just getting gouged, right. So I think prices got so out of line that it's tarnished, I think the image of natural gas as a potential savior and then of course you had in Europe all the knock on effects of industry shutting down and the power sector getting nationalized. So that does, I think, sort of tarnish the image of, of, you know, being a savior.

**David Greely** (10m 50s):

Yeah and I guess people, it's hard to contemplate how much worse things could have been when things are, are plenty difficult and plenty bad. I want to get back to this idea of, you know, the need for more investment and need for more investment in the LNG industry in particular you know, when you talk about prices getting out of line, you know, looking at the situation in Europe right now, there are just bottlenecks everywhere in the system and that's being reflected in a lot of pricing you know, there's a shortage of LNG ships with shipping rates near \$500,000 a day. There's a shortage of floating regasification terminals with their rates near \$200,000 a day and that inability to get LNG off the ships and into the European pipelines has LNG offshore on a ship in Northwest Europe trading something like \$29 in MMBTU below the price of natural gas onshore in the pipeline at you know, the Dutch TTF. These are pretty staggering dislocations. I mean, \$29 is multiples of the price of gas in the US and that's just the differential between offshore and onshore in Europe and I was curious, do you see the investment in these aspects of the system coming that could help debottleneck the system I mean, certainly not in time for this winter, but in coming years.

**Susan Sakmar** (12m 03s):

Yeah, I think we are seeing that we have seen announcements coming. You mentioned shipping and I don't know if you know, but I'm now on the board of a shipping company Flex LNG and certainly ship LNG shipping has had a banner year because there haven't been enough ships and so the LNG shipping industry has been able to command very high rates, but you are seeing announcements of new builds coming, Qatar had an announcement and a few other players have had announcements. So I think more ships are coming. I think more LNG supply is coming, certainly from the US shinier is moving forward with Corpus Christi and, you know, other projects, Venture Global is moving forward and other projects are moving forward. So I think there will be more supply coming, but all of it takes time you know, takes years to build a new ship. It takes years to build a new plant, takes years to build pipelines. So, you know, I think for the next five years there will be quite a lot of dislocations until the industry can add more capacity.

**David Greely** (13m 08s):

I think we're all having to adjust to the fact that we could be in this situation for quite some time and this winter might very well not be the worst of it.

**Susan Sakmar** (13m 16s):

Right we'll see and of course, the weather, right. Everybody's sort of you know, if it's a warm winter, then in terms of supply we're probably fine. European storage is almost full and if it's a warm winter in Europe, things will probably be okay, but if it's a cold winter we'll see and, you know, and then there's always unplanned supply disruptions. So and we have had a number of those and so let's see what happens with those and of course the global economy now is the big wild card. So, we'll see what happens with that as well.

**David Greely** (13m 48s):

Yeah. I wanted to ask you a bit about the maybe a little further upstream on the supply side because like I noted earlier that the US is now the largest LNG exporter and you know, from your seat in the US how do you see US natural gas production responding, and how do you think it'll respond in coming years. Is there room for, you know, a lot more US gas to come on stream, or is this higher LNG exports probably gonna be mean higher prices in the US?

**Susan Sakmar** (14m 20s):

Well, I think, so the supply response, you know, we've had these, these elevated prices and I think the supply response hasn't been as robust as it has been in the past but, you know, a number of well publicized reasons for that but, you know, in very simple terms, the industry I think has been enjoying high prices and returning free cash flow to investors and investors have demanded that banks have demanded that and in other words, it seems to me investors and banks are getting paid back for that shell boom that we had, which was a boom in natural gas, but it wasn't always such a great investment. So people are sort of demanding a bit of payback and, you know, we've had this sort of you know, eight, nine months of payback period. So will we start to see more supply coming online?

**Susan Sakmar** (15m 08s):

I think probably, you know, I just saw though today, and I didn't get a chance to dig into it, but the EIA publishes data on ducks drilled, but uncompleted wells, and I think I just saw today come across my newsfeed that the number of ducks has gone down. Meaning, you know, the US has already drilled a whole lot of wells and they were never completed and so those are the first ones you, you bring online and I think that number is going down, meaning we're bringing some of those ducks online now, so that means more supply will be coming and so we have, you know, probably have to work through that inventory first before there's a whole lot of interest in drilling new wells because of course you know, most of the production in the US is shell gas. Shell gas is very expensive. Those are very, very expensive wells to drill and to complete the completion process is very expensive. The fracking process is very expensive, but you know, I think, I think over time we'll see more supply come on.

**David Greely** (16m 08s):

Yeah and you've talked a bit about the, the financing end being a difficulty in increasing supply. You know, investors demanding higher returns and more cash flow, banks demanding more investment but I was hoping to dig in, you know, a little deeper on that with you in that, what do you see as like the biggest obstacles to the investment we need to expand both natural gas production and to debottleneck the LNG market?

**Susan Sakmar** (16m 32s):

Well, I think there's mixed policy signals certainly the policy signal now with the Biden administration, you can see where the money is going, right. There's lots of money going to solar carbon capture, hydrogen sort of green technology. I think the infrastructure bill that was passed recently has tons of funding for that and so that tends to drive investment and so you're seeing not a whole lot of love, I guess giving to the, to the allergy industry, but you know, that said, sometimes the industry cries a lot, but if it's a good project, I think there's probably money out there. If it's a good project that'll make banks money then I think banks will finance it and so that's where everything has to line up and you know, in that regard, you have a little bit of reluctance, I think or quite a bit of reluctance on the part of banks is, you know, how long is this project going to be around, right?

**Susan Sakmar** (17m 31s):

Do we envision this project can survive, you know, 30 years and that's where I think we have a lot of policy bottlenecks where there is a sense of no oil and gas, you know, it'll be a stranded asset. No oil and gas or fossil fuel project is gonna be around in 30 years. So then it's a stranded asset and so banks are the banker that was on my panel said one of the criteria they're looking at is can this project serve some future role. So the infrastructure that we're building now, if it's a fossil fuel project, can that infrastructure be used for hydrogen, for example. So that to me though, is a big hurdle.

**David Greely** (18m 08s):

That's a big complicating factor.

**Susan Sakmar** (18m 11s):

That's a big complicating factor, right you know, my view, I think I've expressed it to you is, you know, and hydrogen, it's hydrogen's always 20 years away great and so in 20 years, hydrogen will still be 20 years away. I mean, I could be wrong, but that then to me is like another level of complication that, you know, if banks are really demanding that, that adds just another level of complication.

**David Greely** (18m 36s):

Yeah and you've brought up the point a number of times about, you know, the bank financing and I think that can be a misperception amongst a lot of people that they think like all these projects are being done by these large, you know, multinational corporations that you know, have access to equity markets, et cetera. What is the financing for like a typical gas producer or someone who wants to start an LNG liquefaction terminal, like what is the process like for them, could you walk us through that?

**Susan Sakmar** (19m 06s):

Well, I'm not a project finance expert, so I don't know that I'm the best person to walk through that, but I guess I will say sort of in broad stroke, certainly, you know, historically the LNG industry were the big players, the IOCs, the international oil companies, the national oil companies, you know, and I always like to use example of Qatar you know, Qatar really helped build out the modern LNG industry, Qatar and Japan, well Qatar Gas, Petroleum had large IOCs as partners, Exxon, Total, Shell so, you know, projects, you know, entities that could finance on balance sheet, they, they don't always obviously, but they have access to financing. So that was the traditional LNG industry and that model worked very well for decades. Sort of the more modern version is sort of the Shiner model, building it from scratch, not a big balance sheet.

**Susan Sakmar** (20m 03s):

So they do have to go to a lot of banks to finance these projects and these projects most, you know, most people listening but maybe not all, don't realize how expensive these projects are. You know, \$10 billion, right, billions of dollars. So it needs a lot of banks and a lot of financing and it's just a hurdle for a company that doesn't have a big balance sheet. It's sort of almost as simple as that, right. If you don't have a big balance sheet, it's tough to finance and financing today is gotten harder with interest rates going up. So financing is going up by the hour, it feels like financing costs. So I think that's just a challenge. I think we'll get a breaking point at some point we're going to get some shock to the market that'll somehow resolve this is my sense one way or the other.

**David Greely** (20m 52s):

Yeah because right now, I mean the, the prices are going up, which is encouraging for investment, but as you said, interest rates are going up, financing is difficult, you know, in part because of some of the, the ESG type requirements around investing in some of these industries and the policy situation isn't supportive either. I think that's what people often miss is if a policy maker says, Yeah, we'd love to have, you know, more LNG for the next three years or four years. Like that's not much in the span of the life of one of these projects and you need 10, 15, 20 years or more to recoup that investment at, at a reasonable return.

**Susan Sakmar** (21m 28s):

Exactly you know, yes 20, 20, 30 years and I think that's the real challenge for anything, you know, not just LNG natural gas, anything is, I'm not hearing a lot from policy makers on how they want to solve this energy crisis. I'm almost hearing the fact that I'm not hearing anything is it's like they want it to go away without actually bringing on more supply or enough supply. So the only way that happens is you know, a massive global recession.

**David Greely** (21m 57s):

Nobody wants that.

**Susan Sakmar** (21m 58s):

Well, here's the potential outcome. Nobody wants that except it does make things cheaper to construct. So sort of doing the, you know, you, you saw it for sure in the housing, you didn't want to really be building a house during COVID with shortages and labor supply issues and, and just costs that were astronomical. So one thing a recession does do is it tends to drive down costs and you know, does that make a project more buildable that maybe to the extent, you know, there's a company with a balance sheet or financing that can sort of withstand the other shocks that happen?

**David Greely** (22m 36s):

Yeah, and I wanted to dig into some of these policy responses that we're seeing with you know, there's been a lot of policy proposals coming out of Europe in response to the energy shortage including things like a proposal to create a new benchmark for European natural gas now that the current benchmark, as we said Dutch TTF is trading \$29 above LNG on vessels offshore doesn't make a lot of economic sense as it's cheaper because you can't get it through the bottlenecks to get it on shore into the consumer, but it may make political sense as policy makers need to be seen to be doing something in response to the higher prices you know, you're a lawyer and a law professor and I was just curious, you know, when you look at the energy policy in Europe, where do you see things going there and do you see anything that's, you know, potentially a move in the right direction right now?

**Susan Sakmar** (23m 26s):

Well, I think as you said European policy leaders are sort of throwing out something every day and I think some of it is just to appear to be doing something right and, you know, maybe taking a new look at how the European energy market is structured and how the benchmarks are functioning, but at the end of the day it's pretty hard to get anything through Europe, right, you need this consensus of 27 EU member countries, all of which have different interests and so things tend to get quite bogged down. So I don't, it's not clear to me where everything is going to end up really in Europe and what they're going to be able to solve. I think maybe there's probably studies going on and a lot of eyes looking at it and maybe from that something will emerge, but at the end of the day, you know, you still have to solve the really hard challenge of how much energy do we need and where are we going to get that energy is really what it comes down to and those tend to be hard policy questions, especially for Europe and they haven't really solved those just fundamental issues of how much energy do they need and where are they gonna get it and then, you know, at what price, what price are they willing to pay, so all this other stuff is a lot of I think distraction, a lot of distraction and consultant studies that don't actually fundamentally solve the issue.

**David Greely** (24m 47s):

Yeah, I guess trying to avoid the hard question and, and the hard reality.

**Susan Sakmar** (24m 51s):

The hard reality, right especially since Europe did, you know, there were some efforts to try to produce some of their own shale gas and all of those efforts failed for one reason or the other. Either the resource like Poland very much wanted to develop their own resources, but the geology wasn't great in Poland. The UK had sort of okay shell resources, but their first exploratory well caused an earthquake and then that shut it all down. So they have a hard time developing any resources they might have and then they end up just, you know, sort of doing nothing because that becomes sort of the inertia.

**David Greely** (25m 29s):

You know, you brought up UK and Shale and the new Prime Minister, you know, was opening up Shell options again in the UK in one way or another. Anything that could be encouraging there or any lessons from their experience with it the last time?

**Susan Sakmar** (25m 44s):

You know, I think it's gonna take a very forceful policy push to develop any Shell resources in Europe and it'll be almost as simple as, you know, if they want it, then they're just going to have to do it and I say it that way because about 10 years ago when I first started teaching at the University of Houston, one of my first meetings was with a delegation from the UK and a Texas Railroad Commissioner and the delegation from the, now again, this was 10 plus years ago, the delegation from the UK wanted to know more about our US Shell and you know, at the time all of the new news media was talking about how bad fracking was for the environment. So the UK delegation was very much focused on the environmental risks of fracking and the Texas Railroad Commission had, you know, the patience for about five minutes of this sort of hemming and hawing.

**Susan Sakmar** (26m 37s):

And what about this, what about this issue, what about this issue and the Texas Railroad Commissioner, literally, I think he left the meeting after about 10 minutes because he just had no patience for it and he finally said to the UK delegation, listen, you're just gonna have to decide if you want Shell Gas or not it's as simple as that and he literally left and they all looked at each other because they just wanted to keep talking about it and what about this environmental issue, what about this environmental issue and, you know, it was interesting to me because of course as you know, academic and I teach, and so in my law class we talk about all the environmental issues, all the what ifs because that's what we do, right in the law school, all the what ifs, but you know, the Railroad Commissioner just had a very practical response.

**Susan Sakmar** (27m 24s):

So I think policy leaders are gonna have to just really take charge. If they think that Shell Gas is the way to go for the UK then the policy decision and the policy rollout has to be that forceful, listen, we are going to do it and we are going to do it with, you know, the best environmental standards we have at the moment and we're just gonna do it and I just, quite frankly, I don't see that happening in Europe. I think the environmental movement against fracking probably in Europe is probably too strong. Now, maybe these high prices can convince consumers that they should do it, maybe, but I doubt it in part because governments are subsidizing. In Europe governments are throwing out billions of dollars to consumers to subsidize these high costs so, you know, if they throw out enough money, consumers won't really care they'll be like, well it's fine gas prices went up, but I don't really have to pay my bill so it doesn't matter.

**David Greely** (28m 21s):

Yeah, once more, avoiding the hard reality and the hard choices of there's, there's no easy answer, right, everything's gonna have a trade-off and you just have to decide what trade-offs you're willing to live with and as they say in Texas decide yes or no, go for it.

**Susan Sakmar** (28m 36s):

Yeah, yeah, I liked his response because it was just so matter of fact, listen, you just, if you want to do it, do it and then he left the room. It was one of my funny, it's actually one of my fondest memories of a meeting in Texas because it was, you know, when I first arrived in Texas and I'm like, wow, Texas is so efficient as if this is how things get done.

**David Greely** (29m 02s):

So I wanted to, you know, I was hoping you could help me wrap this up in that I think you'd agree that this moment in Europe is transformative one for natural gas in the LNG industry and we've talked about a lot of different pieces of that, but can you like, help put it all together for us. How do you see this energy in the 21<sup>st</sup> century following this winter you know, if you kind of like look ahead over the next four or five years decade, do you see the European energy crisis transforming the not gas and LNG industry and if so, how?

**Susan Sakmar** (29:36):

Well, you know, I, I have mixed views. I'm not sure, I'm not sure if we'll look back at this moment and say, aha, this was the moment when X happened because I guess haven't quite figured out what, you know, what X is other than, you know, is this the moment where we saw more interest in US projects. I get, yes, because a number of projects have sort of been announced as a result of this crisis and a while ago I think back in June, the petroleum economist had a little chart how many projects have made announcements made sign deals since the Russian invasion and there are a number of deals that have been announced. I think the next thing to look for to determine whether or not this is really transformative or not is what deals actually move forward because not all of these deals are final deals, not, you know, most of them are subject to financing. So I think that's what I'm looking for next, well know if this is a real moment in time that spurred the next sort of round of development, at least in the US when we see financing and when we see more fids and we, we ha we're not quite there yet and so I guess I'm waiting to see if we get there or if something else disrupts this, you know, this moment in time.

**David Greely** (31m 01s):

What's on your short list for potential disruptors?

**Susan Sakmar** (31m 04s):

Well, the global economy, so, you know, as we're speaking today, you know, we had another, you know, 500 point down in the Dow with sort of global recession front and center on everyone's mind. So, and certainly Europe is further along the recession track than the US by most accounts Europe is in recession. So how does that impact demand going forward, how does that impact investment in anything, right, natural gas, but in anything going forward and do we need to have that moment before we get to the next moment and one of the things I'd like to go back and do is you know, my sense is, you know, a lot of energy projects I think have been constructed during recessions and during down times because if you have the balance sheet to do it, that's when you want to build something, right. When labor is cheap, when everybody is struggling, when you can get better prices when there's not such a shortage of materials and equipment and labor you know, engineering companies are desperate for any business, so they give you a good bid and so maybe we'll get to that moment and then those will be the projects that really move forward.

**David Greely** (32m 14s):

Yeah. When we used to talk with corporates about hedging programs, one of the big advantages was that if you had a proper risk management program, you would have the flow during down periods to take advantage of things that your competitors couldn't because you could get those low prices and, you know, competitors that were struggling could be interesting acquisitions to grow your business?

**Susan Sakmar** (32m 33s):

Yes and I, you know, we're probably gonna see maybe another wave of MNA and in the US you know, are we gonna see gas producers partner, like really truly partner with exporters. We're seeing inklings of it and so maybe we're gonna see that too. So they'll, they'll merge and create a bigger entity with a bigger balance sheet that can, you know, come out stronger in the next wave. So, we'll see.

**David Greely** (32:58):

So I wanted to bring it back to, you know, your book because the love of like energy in the 21<sup>st</sup> century. If you think back to when you were writing it, if you had known what was unfolding or how do you think about what's unfolded when you put yourself back into the mindset of where you were when you wrote it?

**Susan Sakmar** (33m 13s):

So, you know, I started writing my book in about 2010, maybe before, maybe a little before and originally I had contracted with the publisher to write a book on international trade but you know, and I said you know, I don't really want to write that book. I went back to the publisher and I said, you know, oil, so oil was \$148 a barrel at the time. So this is going back to like, you know, the last financial, the global financial crisis seven when oil hit \$148 a barrel and people were like, oh my gosh, this is crazy and there was the housing boom and this sort of rip roaring economy that would soon bust and so I got interested in energy and LNG and I said, you know, I'm hearing a lot about natural gas and I'm hearing a lot about fracking and the US was supposed to be an LNG importer and I might summon the first events I went to, people were like, is LNG ever coming to the US?

**Susan Sakmar** (34m 14s):

That was sort of the topic of the session, will LNG ever come to the US and of course it never really did and so that initial sort of interest in LNG and the journey of, you know, the US being an importer to an exporter has been sort of a remarkable turnaround and I guess I'm lucky that I got to see it from a very early stage, including the whole Shell gas sort of drama around Shell Gas and fracking because that's a really important piece and when I teach, you know, we spend half the class sessions talking about Shell gas and fracking because you have to understand that piece cuz that really gave rise to the opportunity for the US to be an exporter and when I was writing the book, it just wasn't quite clear how big it was going to be.

**Susan Sakmar** (34m 59s):

And of course, by the time I finished the book, it was sort of like, yes, this is gonna be a big opportunity and I do need to write another book on sort of the US as the biggest LNG exporter because when I finished the first book, it was clear the US was going to be an exporter. It wasn't quite clear how big an exporter we would be in part because you, you never quite know what other countries are going to do and it turns out really one of the, I think the genesis for the crisis in Europe is, you know, the meeting I we had with the UK regulators, there was a lot of high hope that other countries around the world would develop their Shell Gas resources and really no other country did, certainly not in Europe and so had that played out differently, Europe might not be in the position it's in now.

**Susan Sakmar** (35m 46s):

And so, you know, that dynamic wasn't really obvious when I finished my book in, you know, 2010, 11, 12, and it's pretty clear now, right, that that was a stumbling block. So we, might have had, you know the IEA has a, the golden age of gas, right. Was a report that the IEA published in 2000, are we going to have a golden age of gas and that golden age of gas really was dependent on how countries around the world would develop their natural gas and Shell gas resources and it turns out not many did, the US did, and not many did. So it'd be interesting to sort of go back and look at that history and write an updated book on how it all played out. Of course, though, you have to then look forward how was it gonna play out for the next 10 years?

**David Greely** (36m 31s):

There's always another book.

**Susan Sakmar** (36m 33s):

There is always another book, right, but as you can see, I've been a little bit reluctant to write another book. It's a pretty big undertaking. I don't know if I have the, the energy, no pun intended. I don't know if I have the energy for another book.

**David Greely** (36m 44s):

Well, I'll look forward to reading it if you do.

**Susan Sakmar** (36m 47s):

All right, Thank you.

**David Greely** (36m 47s):

Thanks so much.

**Susan Sakmar** (36m 49s):

Well, thank you, David, it was a great discussion. Thanks for having me on the show.

**David Greely** (36m 53s):

Thanks again to Susan Sakmar, Visiting Professor at the University of Houston Law Center, and author of *Energy for the 21<sup>st</sup> Century: Opportunities and Challenges for LNG*. We hope you enjoyed the episode. Join us next week with Oystein Kalleklev, CEO at Flex LNG and Executive Chairman at Avance Gas. He'll be sharing his unique perspective on the European energy crisis and what it means for the LNG industry.

**Announcer** (37m 18s):

This episode was brought to you in part by Abaxx Exchange Market participants need the confidence and ability to secure funding for resource development, production processing, refining and transportation of commodities across the globe with markets for LNG, battery metals, and emissions offsets at the core of the transition to sustainability. Abaxx Exchange is building solutions to manage risk in these rapidly changing global markets, facilitating futures and adoptions contracts designed to offer market participants clear price signals and hedging capabilities in those markets essential to our sustainable energy transition. Abaxx Exchange, bringing you better benchmarks, better technology and better tools for risk management. That concludes this week's episode of SmarterMarkets by Abaxx. For episode transcripts and additional episode information, including research, editorial and video content, please visit [smartermarkets.media](https://smartermarkets.media). Please help more people discover the podcast by leaving a review on Apple Podcast, Spotify, YouTube, or your favorite podcast platform. SmarterMarkets is presented for informational and entertainment purposes only. The information presented on SmarterMarkets should not be construed as investment advice. Always consult a licensed investment professional before making investment decisions. The views and opinions expressed on SmarterMarkets are those of the participants and do not necessarily reflect those of the show's hosts or producer. SmarterMarkets it's hosts, guests, employees, and producer Abaxx Technologies shall not be held liable for losses resulting from investment decisions based on informational viewpoints presented on SmarterMarkets. Thank you for listening, and please join us again next week.