

**SM82 | 8.13.2022****When Markets Break | Episode 1**

Beau Taylor, Former Global Head of Energy Sales &amp; Trading, J.P. Morgan

**In our inaugural episode of When Markets Break, David Greely welcomes Beau Taylor, J.P. Morgan's Former Global Head of Energy Sales & Trading to the SmarterMarkets™ studio to recount his experience in the U.S. Natural Gas market following Hurricane Katrina. Together they explore the risk miscalculations, market conditions, and elements of human nature that led to one of the largest hedge fund collapses on record.**

**In the episode, Greely and Taylor revisit how a multi-strategy hedge fund transformed into one big bet on winter natural gas prices, why their collapse didn't lead to wider systematic distress in the financial market, and what learnings we can apply to better manage volatility in today's LNG markets.**

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**Beau Taylor (00s):**

Even with the best analysis, even with the best team around you, even with the best insights, even with the best of everything, you can still lose an obnoxious amount of money because some variable that nobody really has the ability to predict can change almost instantly and leave you extremely vulnerable. And this is why things such as liquidity management and various different other risk management techniques are so important because liquidity is kind of there when you don't need it, but it's not always there when you do need it.

**Announcer (32s):**

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 (57s):**

Welcome to When Markets Break on SmarterMarkets. In this podcast series, we'll be looking back at past market crises with people who were there to learn what went wrong and what we can learn from it. I'm Dave Greely, Chief Economist at Abaxx Technologies. Our guest today is Beau Taylor, Former Global Head of Energy Sales and Trading at JP Morgan and Former Chief Investment Officer at Taylor Woods Capital. We'll be discussing the US natural gas market from Hurricane Katrina to the Amaranth collapse. Hello, Beau, welcome to Smarter Markets. Really glad you could join us today to discuss this truly fascinating period from 2005 to 2006 in the US natural gas market, beginning with Hurricane Katrina and ending with the collapse of the hedge fund Amaranth advisors quickly to refresh our listener's memory. You know, Hurricane Katrina hit the US Gulf Coast in August of 2005 and this was before there was shell production.

**David Greely (01m 52s):**

So, you know, over 30% of us gas production was in the Gulf of Mexico at that point and Katrina shut down over 80% of it, Henry Hub, the delivery point for the Nymex natural gas futures contract was closed and forced force majeure declared. I don't think that had ever happened before US natural gas prices doubled practically overnight, but more than that, Hurricane Katrina ushered in a new and more volatile market regime and us natural gas, an era that saw the rise and fall of the hedge fund Amaranth, which lost 6 billion. When it collapsed a little over a year later, it's still one of the largest hedge fund collapses on record, Beau you ran energy in sales and trading at JP Morgan during this period and I was curious, you know, could you start us off this morning by taking us back to that era. You know, starting with Hurricane Katrina, what was your experience trading and managing risk during such a chaotic event?

**Beau Taylor (02m 45s):**

You know, natural gas, the time was kind of an emerging market that was in the process of attempting to mature, you know, natural gas trading began earnest with a number of pipeline companies, such as Enron that began to make markets and began to trade the contracts much more aggressively, but at the time you had a market that was largely a surplus market where you had excess supply and you ultimately had to go to a price where you incentivized power facilities or other things like that to burn gas, to balance the market you know, whenever prices would get too high, the inverse would take place and you'd incentivize power plants to burn oil or alternative fuels and for a number of years, you know, natural gas largely stayed in a relatively well defined range regardless of what

the weather was, regardless of what happened with hurricane or tropical events, regardless of what happened and in virtually anything.

**Beau Taylor** (03m 40s):

And, you know, Hurricane Katrina was an interesting one because, you know, I think it was one that caught people largely off guard. You had a scenario where you had a hurricane that largely looked like it was going to go into Florida, potentially as far north as hit land in Georgia or North Carolina and you know, the market, not that they were sleeping on it, but you know, the market had run up a little bit the weekend Friday before the weekend that Hurricane Katrina, you know, and earn strengthened you, the market sold off because it looked largely like a non-event and as soon as that happened, you know, over the weekend Hurricane Katrina hit the coast of Florida instead of dissipating, it made it to the other side of the col coast of Florida hit the warm waters of the Gulf strengthened to an insanely strong hurricane and started heading right towards the production, you know, the meat of the production of the, of the US natural gas market.

**Beau Taylor** (04m 42s):

At that point, you know, anybody looking at balances for natural gas could see a credible scenario where the US simply would not have enough natural gas to get through winter. If enough production was damaged, if enough production could not come back online in the market, wasn't able to fill storage at the point, you know, that they'd anticipate that they needed to make it through the winter almost immediately. The price of natural gas doubled, you know, you came home on Friday and you know, my natural gas is trading \$7 in, MM BTU. When you woke up on Monday, you know, natural gas is trading \$15 plus in MM BTU and the market the market was largely unglued because this was a scenario that the market really hadn't priced in you know, the market did not have a number for how do you price the potential to run out of natural gas.

**Beau Taylor** (05m 35s):

And, you know, natural gas was incredibly volatile for, for a period of time, right after that, as soon as it looked like, you know, natural gas was going to settle down, all of a sudden Hurricane Rita comes through right after that follows almost the identical track. This went a little bit further west. So while Katrina took out a lot of the stuff and the Central Gulf, Rita came through and took out a number of the things in the Western Gulf, and you had, you know, you kind of had a credible crisis situation that I think the market largely wasn't ready for and I think what happened during that period of time, it really did cause, you know, whether it be the risk models that a number of people managed to, you know, use to manage risk, whether it be a number of the training models, whether even be option pricing models, you know, everybody kind of recognized at that time that there's these known unknowns that exist.

**Beau Taylor** (06m 28s):

And when you have an in product you know, nobody's prepared to turn off the heat during the wintertime. You know, you've got to have some mechanism to balance that largely that mechanism becomes price but if that's the case, you know, the market had shown you that prices could go well beyond the realm of volatility that had ever been witnessed in the past and, you know, Hurricane Katrina and Rita really started a new era in natural gas trading, where all of a sudden, you know, now we're pricing for scarcity. We're not pricing for abundance, all the models everybody had to utilize, whether they'd be fundamental models, whether they'd be pricing models, whether they'd be various technical models had to be readjusted. And, you know, you, you were simply trading in a very, very, very new era and, you know, from that point on, you know, all of a sudden, you know, kind of the sky was the limit in terms of people's beliefs, in terms of where prices could go, how far away could they go.

**Beau Taylor** (07m 29s):

Were they delusional, who knows if you know, people were delusional or not, but you began to have a number of people trading very, very, very differently than they had in the past. You had things such as spread trading became very, very, very aggressively traded where people would begin to trade the front winter contracts and sell you know, the contracts further back in the storage season. Once again, putting a price on how likely you were to run out of natural gas and B, if it did happen, what would the risk parameters be if that were to occur. You started seeing similar things with option pricing models, where calls became a much more expensive than puts because in a crisis situation, you know, there really wasn't any known top for where, you know, for where the market could go and in risk models where, you know, I said, people might have assumed that you had a certain amount of risk, short contracts of natural gas, but you know, that risk became much, much, much higher.

**Beau Taylor** (08m 30s):

You know, if you were short, even a modest amount of money going into Katrina, cutting across Florida, you lost insane amounts of money on Monday morning when you came back and so once again, a number of the traditional capital providers were forced to provide less capital simply due to the fact that now we're in a new regime, in a new era where prices were, you know, potentially gonna go much, much, much higher and, you know, this was, was largely on the heels of, you know, the various different merchants, whether it be Enron or Diana G or a number of the other people that had had financial problems in the early 2000s going away. So you already had a scenario where you had fewer liquidity providers than you had in the past. A number of the banks had gotten into the business and were able to provide liquidity, but, you know, they were in a position where they couldn't provide as much liquidity as they could in the past due to the fact that, you know, they were looking at new risk models and they're looking at a riskier contract and, you know, the market was calling for hedge funds to come in and provide additional liquidity because at that point, really the only way to balance the market and the liquidity needs of the market was to find, you know, speculative capital that was willing to come in and take the other side of the commercial business to allow the markets to remain in balance and, you know, allow the markets to kind of remain stable.

**Beau Taylor** (09m 47s):

So, you know, Katrina was kind of the beginning of a new era in one that in, in, in many ways is, is echoing itself even today.

**David Greely** (09m 55s):

Yeah and like that whole idea of the new era and the new psychology and when people realize that the old ways of doing things might not apply and the changes that creates to the way things are traded and psychology, it echoes across time and across markets, I think. And, you know, Hurricane Katrina also mark the beginning of the rise and fall of Amaranth and at star natural gas trader Brian Hunter, and there have been volumes written about Amaranth, the role of so-called widow maker trades, the spread trades and natural gas and the failures in risk management. I want to ask you about some of the failures in risk management, but first I wanted to, if you could walk us through a little bit, you know, you said spread trading became a new thing in natural gas to a large extent after Katrina. Could you tell us a little bit about these so-called widow maker trades or being long March short, April futures, and why are these trades so attractive and so dangerous?

**Beau Taylor** (10m 50s):

I think that, you know, traditionally spread trading commodities is largely a function of what the physical market looks like at the time and so, for example, if you were in deficit and you need to attract commodities out of storage, the near term contracts will trade above the future contracts and it'll incentivize people to bring, you know, physical commodity to market. Now, conversely, if you're in a scenario where you have excess, you need to create incentive for people to store that excess and so, you know, the front month contract will trade below the forward contracts because at that point, you know, people will buy the prompt contract, they'll put into storage and they're able to maintain an arbitrage by selling those forward contracts and, and generally look natural gas, spread trading, certainly wasn't anything new. There was certainly lots and lots of people who traded very actively across the curve.

**Beau Taylor** (11m 42s):

But I think the difference was that for a number of years, you had a relatively predictable, you know, curve shift that was largely dependent on current fundamentals. And so, you know, whatever the market needed to incentivize, you know, the curve would largely function as a way to incentivize what it required in the physical market. You know, what hurricane Katrina and Rita showed was that, look, if you have a scenario where you have extreme tightness, yes, you could have a window where prices do go higher, but they might go substantially higher than anything you'd ever anticipated before and people became much more comfortable purchasing, you know, spread contracts beyond anything that might even have a historical basis because the market had shown that look, if something bad happens, you know, you can have a payout event that's dramatic. The other thing that you know, have with spreads is there's a lot of implicit leverage in spreads.

**Beau Taylor** (12m 42s):

And so whether it be margin that you have to apply for futures, contracts, margin, that you might have to apply for swaps because you have an offsetting buy in sale, you know, you can take a much larger position. So if you're making to make a bet, for example, that gas is going to run out by the end of winter, you can make that bet with substantial leverage without actually having to put up as much capital as if you were going to make that bets for example, just buying the futures contract outright without that offset and so I think for a number of reasons, you know, a lot of people were becoming enticed to make these different bets. Plus, you know, now that lots of

people from a pricing standpoint were looking at the model in a similar way, right. They're looking at a model that had insufficient commodity to meet demand.

**Beau Taylor** (13m 29s):

You know, number of people are pricing out this kind of hope for lack better term that look, if something bad goes wrong, we're going to have a significant asymmetric payout and you mentioned Amaranth, you know, look, if you look at its relatively public, but you know, if you look at some of the positions they'd had going into Katrina, right, they had made a significant amount of money going into Katrina because they'd correctly predicted that if things got tied, if there was a tropical event, if there was some other thing that occurred, you know, prices could go substantially higher in one contract versus another and they were one of the first, really big winners on, you know, some of these spread trades and so they'd actually been relatively ahead of the curve and, you know, specifically when you mention risk and you talk about how risk looks at it.

**Beau Taylor** (14m 20s):

You know, if you look for example, at a bank, you know, a bank doesn't necessarily have to make all of their money and energy and they tend to be incredibly quantitative about a number of different things when they're looking at risk and, you know, a bank is gonna be agnostic as to what the product is. I'm not saying that they view everything as a widget, but they'll certainly say that we're gonna kind of normalize things to units of risk and for example, at a place like a JP Morgan or any of the other big banks, they would typically say, look, if you've got significant volatility, that's occurred in in a relatively recent past, it's gonna factor heavily into that risk model and it's gonna create an impact. It's gonna create limits in terms of what people can take in terms of risk onto the bank's books and balance sheets.

**Beau Taylor** (15m 08s):

You know, and the other issue with banks is, you know, banks don't necessarily have to be in energy. They've got lots and lots of different things they'll attempt to make money on. And so if they view whether it be natural gas or any product as being excessively risky at any get of point in time, you know, you're gonna have liquidity, that's gonna pull back out of that market. So following Rita and Katrina investment banks had a way of calibrating risk that tended to be much more conservative. It tended to be limiting in terms of risk. It tended to take some of the liquidity out of the market, even as additional banks were getting in because a number of the banks and the financial institutions felt like, look, you know, this is one that could easily get over our heads and we want to make sure that we aren't in a position to be, you know, adversely affected by this you know, by these events, the financial players, the non-bank financial players, such the hedge funds and others, you know, they employed teams of incredibly bright people in the field of risk.

**Beau Taylor** (16m 06s):

They were using very sophisticated techniques to calibrate and determine what that what that risk may actually look like. A lot of these people were very, very, very, very comfortable in terms of how they were looking at how they were calibrating. They were very comfortable in terms of liquidity of the market, how they would view it going forward and so, you know, even at the time you had an interesting dialectical where, you know, the banks were becoming a little bit more conservative. The non-bank participants were becoming more aggressive. The banks were viewing this as excessively risky and a number of number of the non-bank participants were viewing it as something that was highly opportunistic with scenarios that could throw off insanely high profits. If, you know, for example, you had a scenario where prices did get incredibly tight they were looking at asymmetric payouts in general.

**Beau Taylor** (17m 02s):

They had profited from the Katrina and Rita debacle and you, you had them actually getting more aggressive as other people were pulling out. They were coming in to fill the gap in liquidity that was being largely left by the non-bank participants or by the bank participants and by the pipeline companies and others that had pulled out and at this point, like I said, you know, you had teams of PhDs, who'd become incredibly comfortable with risk metrics. Now, the flaw I believe in their risk analysis was I think they were assuming a traditional level of liquidity for the market where you had banks, not just aggressively in the market, but aggressively growing the risk in the market at a time, the banks were actually pulling back, you know, traditionally you had a number of the pipeline players and others, the physical players that were extremely aggressive that had largely pulled back.

**Beau Taylor** (17m 56s):

And so a lot of the marginal liquidity was actually being traded back and forth amongst the hedge funds and the belief was that the pool of liquidity happened to be substantially different and substantially deeper than you might have seen in the real world when things became, you know, began to come unglued and I think that dichotomy between the way some of the banks and financial players



were looking at it versus the non-bank players were looking at, it kind of gave rise to this next level of volatility where, you know, most of the people that were passing lots and futures back and forth between each other weren't people that ever had any intention of buying the natural gas or selling the natural gas in the physical market. There were largely people that were making paper bets on the ultimate end of winter balances in natural gas.

**Beau Taylor** (18m 48s):

And you created, you know, like I said, I think a false sense of security. I think you had, in some cases, echo chambers where a number of people who were looking at risk the same way were kind of sharing ideas and sharing comfort levels and there was this general belief that, you know, the market was in a new paradigm and that there was a new way to profit from the new paradigm that the old risk metrics, while there might have been a historical precedent may even lead to more opportunity than risk and I think a number of players were willing to take that bet and put substantial capital behind those bets.

**David Greely** (19m 21s):

That's really fascinating. There's so many interesting threads to pull on there and, you know, one that I'm curious about, you know, with the risk management side, you know, there can be failures in sizing, the trades relative to the firm's capital and liquidity, and there can be failures, sizing, a trade relative to the size of the overall market that you're in and it sounds like, you know, there was both in the Amaranth case and how big were some of these trades relative to the size of the us natural gas market at that time?

**Beau Taylor** (19m 51s):

You know, look, it's always amorphous, attempting to figure out exactly who has what and what the ultimate scale was, but you know, what you certainly see over time is you'll see a number of people who will take concentrated bets and the general belief sometimes is that, you know, people believe they can be the market. People sometimes believe that they have a deep enough balance sheet to take on enough risk that they can, you know, they can kind of wait out the other people coming in on the other side. So for example, in a, in a scenario like a March, April spread where, you know, the higher that market goes, the more physical incentives that you create for various different players that actually have the ability to store or withdraw from storage to come in and actually make bets against that and so when something gets out of whack, you know, there's this belief in some circles that the old rules never applied, but ultimately natural gas in all commodity markets or physical markets, ultimately the physical players are substantially larger than any financial player could really ever be.

**Beau Taylor** (21m 00s):

And so when you have metrics that simply create substantial incentives for people in the physical market to react and act differently than they might have, otherwise, you're going to enhance liquidity coming into the market against, you know, your position. And it almost doesn't matter how, you know, right. You might hope that you can be in the short term, you're going to have, you know, substantial liquidity coming in to balance the market from the physical players and if you look at you know, situation like, you know, the March-April spread, right, where you had gotten the spread up to a level where anybody that had any storage whatsoever was incentivized to sell, you know, their storage forward into that contract and they were incentivized to simply buy futures contracts to refill storage in the back end. So even if you'd gotten to a lower level of storage, you know, some of the physical players felt like they had it within their system to, you know, to monetize that.

**Beau Taylor** (21m 59s):

And, you know, at that point, once the market becomes more balanced, even if you've got a substantial balance sheet, and even if you've got a scenario where you've got generally the fundamentals behind you, if the incentive structure changes and you get a balance of liquidity now effectively, you're making a bet that look, if things, you know, normalize within weather, right, you know, chances are, you know, things are gonna collapse and go back to lower levels and, you know, look certainly to the extent that you have another tropical event, or if you have some something that causes weather, you know, you know, much colder or something of that nature, you know, it can certainly go higher. It's just, you might not have as much company to push prices much higher and I think some of the things, the PhDs and others would kind of forget about when they were looking at the different models that they were coming up with, whereas when Hurricane Katrina hit, right, you didn't have time to balance your system largely because half your system was just gone, right.

**Beau Taylor** (22m 57s):

It was either underwater or wiped out by the hurricane versus if you're attempting to trade something, a season in advance, the various different participants in the physical market have time to react to those incentives, have time to optimize their assets, to take advantage of the incentives that the market's providing and I think that, you know, sometimes if you've not been in that market, your entire career, the way a number of these PhDs and other people have been in the risk department, you know, there, I think more focused on, you know, the different outcomes that you could have in a heavy tropical season or other things like that without focusing on the fact that look, if you've got a different set of incentives and a different set of timing for how quickly people can react, you're probably going to get at least potentially get very, very, very different outcomes and I think that, and I don't want to even necessarily say hubris, but you know, certainly that in naiveté, in terms of some of the, you know, the scale and scope of the physical players and what they can do within their system to balance the market sometimes can lead people to take risks that may be in excess of the risk they anticipated that they were taking.

**David Greely** (24m 05s):

Yeah, that's such a great point about commodity markets being physical markets and that notion of, you know, if you need to bring supply and demand back into whack in a short period of time, it takes a big price move, but if you're gonna bring it back in line over a longer period of time, it takes a much smaller price move if you give the physical market time to adjust and, you know, the other threat I wanted to pull on with you was, you know, it seems that this human dimension of it, you know, often early success is sometimes the worst thing that can happen to a trader. You know, it seems like there were a lot of these types of human vulnerabilities at play driven by the early success in the wake of hurricane Katrina. He said between the, you know, the new PhDs, the, you know, the traders who made a lot of money during the, the oh five season that overconfidence in oneself, the hesitancy of others to ask questions of someone who's been making a lot of money and the ability to just grow very rapidly, your assets that you can put at play and to leverage them up.

**David Greely** (25m 06s):

I was curious in your experience, do you think that's true? And then how do you protect against those types of vulnerabilities?

**Beau Taylor** (25m 14s):

I think it's really, really, really hard, right. I mean, we're, we're all humans effectively, we're moist robots where we respond to stimuli in certain ways, we're prone to wanting to believe the good things we we're prone to wanting to believe almost as a protective mechanism from psychology that, you know, these bad things can't happen to me and that if I was wrong, I'd be able to get out and if I'm right, I'm gonna make, you know, I'm gonna make all this different money and you see it a lot and certainly in a market like natural gas, where there's the opportunity to make a lot of money very, very, very quickly. But the inverse of that is there's an opportunity to lose an insane amount of money extremely quickly and again, I think we as humans and certainly as traders, believe that we're gonna be on the right side of the big moves, but unfortunately a lot of times you have heard mentality and a lot of people kind of line up on the same side of the trade and for a variety of reasons, you know, whatever the, the fundamental outlook you were looking at can change very rapidly.

**Beau Taylor** (26m 16s):

And certainly in a market like natural gas, the primary variables weather, which, you know, even here, like even figuring out what's gonna do two days in advance is not super easy. So trying to figure out what's gonna be six months or a year in advance is virtually impossible and so a lot of times what people would do is they would make bets predicated on large statistical analysis and in different range of outcomes and how these different things could happen and statistics, you know, sound really good. But, you know, I think it's, you know, Mike Tyson, who said, everybody has a plan until they get punched in the face and you know, this is what happens in natural gas. I mean, if you look at what happened, even with the fall going into, you know, what we described as it, as the Amaranth collapse, right, you had a scenario where you had a heat wave that was coming in in August, you know, prices were starting to rally.

**Beau Taylor** (27m 07s):

It looked like, you know, once again, you know, Brian Hunter and the other people that were aggressively in this market were gonna be proven right, again, and that they were gonna make a lot of money and almost overnight, you know, the forward weather outlook changed. You, you had some tropical events that seemed to dissipate. You had some heat events that seemed to dissipate and literally, almost overnight, you went from a scenario where the market looked incredibly tight to a scenario where the market looked potentially extremely loose and if you've got a large position on, and you've got limited ability to, you know, to defend that position, to adding incremental capital, you're largely a slave to whatever the market wants to do at the time and even with the best analysis, even

with the best team around you, even with the best insights, even with the best of everything, you can still lose an obnoxious amount of money because some variable that nobody really has the ability to predict can change almost instantly and leave you extremely vulnerable.

**Beau Taylor** (28m 09s):

And, and this is why things such as, you know, liquidity management and various different other risk management techniques are so important, you know, because liquidity is kind of there when you don't need it, but it's not always there when you do need it and, you know, a lot of people get a false sense of confidence and self-assurance when we're in a market and things are going their way, and they don't think they have to worry about getting out, because they just assume that there's always gonna be lots of, you know, if you're trying to sell lots of bids, if you're trying to buy lots of offers and when things turn and when things turn on a dime and you've got an outsized position in the market, you're just in a position where it's really, really, really difficult at that point to get out and at that point, you really are at the mercy of the market for where they're gonna let you out.

**Beau Taylor** (28m 52s):

And at that point, you know, it's almost impossible to figure out what your true risk is because your risk has nothing to do with fundamentals at that time. It simply has to do with liquidity and how do you have to price this to actually find the liquidity that you need to exit a significant position and, you know, you've seen it happen in natural gas. You've seen it happen in oil. You've seen it happen in virtually every market and unfortunately, you know, time and time and time again, traders find themselves in these positions, not because of ill intentions or anything of that nature it's more because of new human nature because you, once again, they're very comfortable when things are going their way and people aren't always prepared for what the world looks like when things go the other way and what that liquidity profiles gonna look like at that point in time

**David Greely** (29m 41s):

And thinking of the, the Amaranth failure in an odd way, the collapse of Amaranth was a successful failure in that, you know, the firm collapsed, but the US natural gas market didn't, and that's probably why when people think of, you know, hedge fund collapses, they think of long term capital management, where there was a risk of the financial system being taken down. But, you know, in, in the case of Amaranth, many people outside the commodity markets may not remember it because you know, the market was okay and I was curious, you know, why do you think that was, and how did this whole episode resolve of itself?

**Beau Taylor** (30m 15s):

You know, if you think about the size and scale of that position by, you know, by any metric, you know, was a large position and certainly a large position in an absence of liquidity for a, you know, a hedge fund, which has limited capital which has investors who have the ability to redeem, which has a scenario where when things go poorly, there's a number of risk management constraints. The kick in many cases, you know, force, you know, the funds to act, in certain different ways and so unfortunately when, when there's a hedge fund that has a big position, there's really no way out of it once you're at risk of exceeding whatever the capital is in that entity, if that risk gets transferred to a significant financial institution, like a large commercial bank or a large investment bank that has access to liquidity through various different government entities, that has a significant balance sheet that has the ability to create their own liquidity in multiple different ways.

**Beau Taylor** (31m 15s):

It might be a big loss. It might be something that could, you know, dent the balance sheet in one way, shape or form, but it's not something that could necessarily take that financial institution down and I think in the case of Amaranth, when that risk went from relatively weekends, which is an investor product that had, you know, limited ability to post additional equity to a large global investment bank in commercial bank that had a substantial \$3 trillion balance sheet, you know, the risk to the mark and the systematic risk at that point was dramatically different and, you know, look, I think it's the reason you see the fed step in and you see all these other different government entities step in to provide liquidity when things get funky and in a number of financial markets, because ultimately you need something much larger to provide the liquidity that you need to balance the market.

**Beau Taylor** (32m 12s):

And I think in the case of Amaranth, because it was isolated largely to one market that was, you know, dislocated, it was isolated largely to one firm that was participating in a significant way in that dislocation and those positions were able to be transferred to a large global financial institution that had a substantial balance sheet. You know, simply at that point, you know, the systematic risk effectively disappeared, right, you know, that risk, wasn't going to be large enough to take down a bank the size and the scale of JP

Morgan. I mean, it could have dented earnings, it could have done a number of different things, but it wasn't going to be able to you know, JP Morgan was going to be able to provide the liquidity of those, you know, those futures and other products needed and at that point, you know, the systematic risk in the market was largely gone and at that point, it was really simply a matter of trying to buy a little bit of time to find little liquidity, to kind of balance out pricing so that the market could get back to functioning in a much more normal way, which happened, you know, almost instantaneously within a few days, you know, market conditions were largely back to normal.

**David Greely** (33m 22s):

Yeah. And talking with you today, Beau I can't help, but think that after a decade of a relatively calm, natural gas market created by the shell revolution, we're now stepping back into a far more volatile gas market. You know, another new regime much like was experienced in 05-06. This has already been happening in Europe and winter will be coming. So I was curious, what's your view on where we're heading and what lessons, you know, from the gas market of 05-06, should we be taking with us?

**Beau Taylor** (33m 52s):

It's, it's actually a great question and it's actually quite scary because a lot of times people don't necessarily know and learn from, you know, past mistakes and past things that have happened in the marketplace. But, you know, we, we went through a significant transition from traditional drilling techniques to shale drilling techniques, which ushered in largely a 10 plus year period of, you know, lower prices and less volatility and all the things that are really, really good for consumers in the economy in general and now for a variety of reasons, you know, the market is much more focused on lower sources of carbon to produce electricity, lower sources of carbon, to heat and provide various different forms of energy and attempting to transition that in a relatively expedited fashion while, you know, large we don't have the infrastructure in place to do that.

**Beau Taylor** (34m 52s):

And, you know, it's a challenge on a number of fronts because a number of the best technologies that we have for low carbon tend to be things such as solar or wind, which are largely once again, depending on whether, you know, it might be whether the wind blows, whether the sun shines, how long the sun shines a number of various different things but, you know, you can make a case, an aggregate as to over the course of the year, how many hours you should get, but you don't necessarily know every day or even the following day exactly what it's gonna look like and, and, and how it's going to look and unfortunately, what that requires is it requires a substantial amount of backup generation, which largely tends to be inefficient and largely tends to be not particularly clean to subsidize for the fact that you don't have, you know, perfect clarity into when you're going to see you know, when the wind is gonna blow or when the sun is gonna shine or whatever other metric that you're utilizing to create energy.

**Beau Taylor** (35m 55s):

And, you know, I think a lot of people have very good intentions there's a substantial amount of capital flowing into this in various different forms, whether it be research, whether it be infrastructure, whether it be other different things and, you know, we, we're kind of trying to fix this thing while we're going mock five already, right, we've got a booming global economy. That's becoming increasingly energy intensive. The industries of the present in the future require extremely highly fine-tuned power that, you know, really doesn't have the ability to be interruptable, you know, power interruptions create massive problems and virtually everything that we do and, you know, when you've got a system that's that highly dependent on reliability, and you're attempting to change that system, and you're attempting to change it with things that don't have that same level of reliability, it creates, you know, it, it creates issues.

**Beau Taylor** (36m 52s):

And so, for example, if you look at Europe where Europe became largely dependent on Russian natural gas, they, you know, they cut off a number of their nukes because of, you know, Fukushima and once again, to usher in larger scale renewables across the continent and you had a scenario where look for a variety of reasons, they haven't gotten quite the output. They might have expected from the renewables when they needed it. They've had trouble securing gas, obviously from Russia due to the crisis in Ukraine. You've got a scenario where even without cold weather you're having industrial shutdowns and other things like that that are occurring simply due to the fact that, you know, they're struggling to even get the fuel that they need and now they're looking at making changes such as not necessarily closing nuclear facilities that they'd attempted to close otherwise.

**Beau Taylor** (37m 45s):

But once again, you've got a very, very, very finely tuned, you know, energy system you're disrupting that system. You're disrupting that system with newer technology that newer technology requires a substantial amount of backup in the event that for whatever reason,



you don't get the output that you anticipated due to not having natural gas, largely that backup in Europe is coal and so now you've got largely the worst of both worlds, right, you've got extremely high prices, you've got a low level of reliability and you're going to have some of the highest carbon output that they've had in years due to the fact that they've been forced to, you know, largely depend on coal generation to fill the gaps and I think when you look forward and certainly you see the same things occurring in the United States where, you know, you're gonna have a much more volatile regime where when everything's working well, you know, there's the potential for prices to go negative, right.

**Beau Taylor** (38m 46s):

If there's too much wind or too much sun or too much anything like you, you, you can potentially have too much power for the system and you have to find a way to sync that power one way or the other and conversely, if you're not getting the conditions that you need, you're likely going to see substantially higher prices and, you know, there's largely two trains of thought. I mean, in one train of thought is, look, we should do a little bit more of everything and if we do a little bit more of everything, at least we'll have reliability and give ourselves a chance to at least get to whatever that endpoint is, but do it in a very responsible way and there's others that feel like, look, we're here, we're here right now we need to do it. We need to kind of force the force the issue and unfortunately, if you're wrong, when you force the issue, you end up with situations like the one that you currently have in Europe, where you have a low level reliability, you have extremely high prices, and you have a scenario where you actually have a much, much, much worse carbon footprint than you would've had if you simply you, if you're simply smart about the mix of resources that you use and you transition in a responsible way.

**David Greely** (39m 57s):

Yeah and I guess it also that volatility will attract a, a new generation of traders and hopefully they'll remember some of the risk management lessons. What do you think the odds of that are?

**Beau Taylor** (40m 06s):

Zero, right. I mean, I think, you know, unfortunately what happens is you have these cycles and, you know, a number of the people that were extremely active, you know, 15 years ago when these things occurred, have moved on to other things over the course of time and over the course of their career. And conversely, you know, people can read about these things, but a lot of times until they've felt them, right, until they've been on the other side of a trade you know, of a trade that they really didn't have the ability to control it, it's hard to know just how painful that can be and hard to know how difficult it is to manage in that situation and, you know, and on top of that, you probably have less investor capital in the space than you've had in years, just due to the fact that for a variety of reasons, people have pulled back from investing in funds that focus on hydrocarbons, the banks have largely who been focused on facilitating consumer businesses.

**Beau Taylor** (40m 59s):

You don't have the same level of trading that you've seen out of the pipeline companies and the physical companies and so you've got a market that's actually much more vulnerable now than it's actually been in quite some time with a backdrop that's potentially much more volatile than it's been in quite some time and I think that combination's potentially very dangerous and I think anybody attempting to trade in those markets and attempting to take advantage of what they view as the opportunities, you know, they just have to be careful they have to be thoughtful. They have to look back to the lessons of the past and, you know, I think if they're smart about it, there is massive untapped potential and I think you're gonna have one of the more interesting trading ranges that you've had in several years over the course of the next few years, as we attempt to figure out how to successfully transition. But I think there's a tremendous amount of money that can potentially be made during that window. But once again, I think if people aren't careful, if people don't learn the lessons in the past, if people don't recognize their flaws and their human nature, they're gonna find themselves extremely exposed. And, and, and I think history could repeat itself time and time again.

**David Greely** (42m 04s):

Thanks again to Beau Taylor, Former Global Head of Energy Sales and Trading at JP Morgan and the Former Chief Investment Officer at Taylor Woods Capital. We hope you enjoyed the episode. Please join us next week as we continue, when markets break on smarter markets with our guests, David Gornall, Former Global Head of Precious Metals Trading at Natixis and a Former Chairman of the LBMA. We will be discussing the massive dislocation between the gold markets in New York and London in March, 2020 during the early days of the COVID-19 lockdowns, we hope you'll join us.

**Announcer (42m 37s):**

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**Announcer (43m 13s):**

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