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[00:00:00] **Rory Johnston:** Thus far in the war we're at more than half a billion barrels of oil that should have been produced this year based on all of our normal expectations going into the war. But now haven't been. If you can't fill in supply, you draw down too many inventories. Prices need to rise to destroy demand on the other side.

[00:00:17] So this would be a massive downshifting of the entire global economy forced by supply restraint. This is not just a consumer kind of recessionary depression crisis. This is also a government fiscal crisis because the government at this current stage is naturally going to try and shoulder a lot of that pricing pain itself, it's gonna be a catastrophe.

[00:00:36] I think that like very simple, it will be devastating.

[00:00:43] **Nate Hagens:** Today I'm joined by oil market researcher Rory Johnston, to discuss the large scale implications of the Strait of Horus closure for the long term and near term stability of global oil supply and the subsequent ripple effects on our industrial and geopolitical and financial systems. Rory Johnson is the founder of Commodity Context, also a lecturer at the University of Toronto's Monk School of Global Affairs and Public Policy, as well as the host of the Oil Ground Up podcast.

[00:01:17] Additionally, Rory is a fellow with both the Canadian Global Affairs Institute and the Pain Institute for Public Policy at the Colorado School of Mines. Prior to founding commodity context, Rory led commodity economics research at. Scotiabank where he set the bank's energy and metals. Price forecast, advised

the bank's executives and clients and sat on the bank's senior credit committee for commodity exposed sectors.

[00:01:42] This was a whirlwind conversation on the implications to the oil markets for the Strait of Hormuz situation. We talked about the impacts on California, the impacts on North America, the impacts on less developed countries, and the best case, worst case base case scenario of the, unfolding situation in Iran, in the Strait of Horus.

[00:02:06] I actually learned a lot on this episode and it reminded me of way back in the day, diving deep into the oil market, particulars. I think you'll enjoy this episode. Please welcome Rory Johnston. Rory Johnston, welcome to the program.

[00:02:23] **Rory Johnston:** Thanks for having me, Nate.

[00:02:24] **Nate Hagens:** So, your recent interviews have been typically focused on the near term financial and investment aspects of the oil situation.

[00:02:34] particularly now today, which is, Thursday, April 23rd at 1105 Central time in the strai of hormones. No, actually it's central time. The straight of hormones was part of my question. so today I'm hoping that we can redirect your experience to maybe a wider, broader, vantage. And maybe we'll start with some fundamental misconceptions about how oil flows in the present global economy and why these disruptions in the Strait of Ous, because of the Usis Israel Iran situation have ripple effects across everything.

[00:03:12] So to help viewers understand the scale of this story that's been unfolding since the end of February, can you tell us about what actually flows through the Strait of moves and what fraction of the global energy system depends on those flows?

[00:03:27] **Rory Johnston:** I think it's always good in these conversations to start with what we'll call the barrel counting of it all.

[00:03:31] It's kind of, you know, exactly what we're talking about in a supply demand sense. So. For viewers, our listeners not familiar with the oil market generally. We typically refer and talk about it in terms of flow rate. So right now, supply and demand, or I guess immediately prior to the war, supply and demand in the global oil market was around 105 million barrels a day.

[00:03:53] but given for easy math, let's just say a hundred million barrels a day of supply and demand in the market of that roughly 20%, 20 million barrels a day flowed through the strai of hor moose. Of that was roughly 15 million barrels a day of crude oil specifically, and another 5 million barrels of refined products and natural gas liquids.

[00:04:15] So mostly middle distillates like diesel and jet fuel, that went largely went to East Africa and up into Europe. Then natural gas liquids like gas condensate, natural gas liquids like propane and, butane, et cetera. That largely went into pet chem feed or petrochemical feeds in Asia. So that's the kind of, that's the chunk.

[00:04:36] 20%, roughly one fifth, the of the world's supplies travels through this very critical maritime choke point.

[00:04:42] **Nate Hagens:** I've been using references to, Frank Herbert's Dune and the spice because it's not so dissimilar.

[00:04:50] **Rory Johnston:** No, I mean, the, spice, the barrels must flow. And if you go back and read Dune in particular, it's pretty clear that Frank Herbert was talking about oil and this particular patch of geography across the world.

[00:05:03] Like this is a story. This is a narrative that we've been watching for a very, long time. And honestly, if you had asked me three months ago, Rory, will the strait of hormones be closed this year? I would've said absolutely not. I have been in this market now for going on 12, 14 years as an analyst.

[00:05:25] Ever since I got into this, the perennial kind of every year, every month you would hear someone talking about how Iran was about to close the straight of hormones. It was the boogeyman scenario forever. And it never happened even during the Iran or rock war in the 1980s, when you had way more fire across and, attacks on shipping in the strait, you never saw shipping through the Strait stop.

[00:05:49] So it was always this kind of bizarre kind of thought experiment that we'd never thought we would see realized.

[00:05:55] **Nate Hagens:** And it, how does this compare to previous, crises, in the, seventies or regarding Iran in this situation?

[00:06:04] **Rory Johnston:** So the, overall supply loss to date is the largest supply shock in the history of the oil market.

[00:06:10] Though we have not yet felt the full weight of that pricing impact, as I'm sure we will discuss before getting into the kind of comparisons to historical, it's important to talk about the offsets and the kind of ways that we have reduced it from that full one fifth 20 million barrels. In total, the actual supply hit to the market is somewhere right now around 13 million barrels a day.

[00:06:31] And that factors for a couple successful rerouting away from transits that normally occurs with the Gulf, the most notable of which is Saudi Arabia's East West Pipeline that travels from the Gulf side of Saudi Arabia all the way west to the Red Sea, to terminate at the industrial port of Yabu. And that pipeline has

about a capacity of 7 million barrels a day, and you had two to two and a half traveling on it before.

[00:06:54] So, you know, you've got four and a half to 5 million barrels a day of switching capacity in the Gulf. So that's been, the biggest offset that brought us from like 20 to 15. Then you also have some, you know, a little bit of rerouting capacity in the UAE out to the, port of Fuera on the Omani coast, as well as you've also had Iranian oil bizarrely continuing to flow through the majority of this crisis thus far, immediately prior to the blockade being imposed all that together.

[00:07:24] You know, you're left with about 13 million barrels a day of production in the Gulf region that can't get out. And when oil can't get out, when it can't, when it doesn't have egress, as we talk about it, it can't go anywhere. You can't just spill it onto the desert. You have to shut in the wells. Right.

[00:07:39] So this is essentially, this is the real supply loss that we're dealing with is that 13 million barrels a day that accumulates, like accumulates every day. And thus far in the war, we're at more than half a billion barrels of oil that should have been produced this year, based on all of our normal expectations going into the war that now haven't been.

[00:07:59] **Nate Hagens:** So that could be offset by three possibilities, one production elsewhere.

[00:08:04] **Rory Johnston:** Yep.

[00:08:04] **Nate Hagens:** Two, draw down of stocks and storage, like emergency reserves or other, or three, using less.

[00:08:14] **Rory Johnston:** That's correct. So I mean, if we, and, let's go through those because I think all of them are gonna happen to a certain extent.

[00:08:19] and let's, for the purposes of this discussion, assume that Horus remains closed indefinitely, what would it mean to replace those barrels? How would the market solve that kind of imbalance? So as you know, the first and most obvious way would be someone else producing more. where would that come from?

[00:08:36] Most notably, I think people talk up and think about the fast cycle response rate of the US shale patch or light tight oil, which has the fastest response rate, between investment and production in the oil industry, typically we talk about response rates in the oil industry upwards of like five to 10 years.

[00:08:55] US shale is more like months. And that's, you know, still slow in the scheme of this conflict, but very, fast in oil market terms. But the hole in supply is just way, way, too big. at the peak of us. Production growth in 2018, we saw US production grow by 2 million barrels a day, year over year, which was the fastest that any country in the history of the oil market had grown.

[00:09:18] Supply. That alone would take half a, you, you know, six plus years to fill in, the supply hole. So that's, not an option. We can't, have that imbalance for, you know, a half dozen years. On top of that, you've also got, like, the main areas of non OPEC supply growth generally right now are entirely concentrated in the Americas between the United States, Canada, Guyana, Brazil, and Argentina.

[00:09:43] All of those producers will produce some this year. But overall, we're probably talking, let's say, one and a half million barrels a day of expected growth this year against a 13 million barrel a day whole in the market. So supply is there, but it's not gonna be fast enough, even with higher prices. The next, I think, chunk is stocks Now.

[00:10:04] The important thing. So I always think with the oil market is like the world's largest stock and flow model. And what we mean by stocks are basically

any barrel that has been produced out of a wellhead but has not yet been consumed by an end consumer. But that flattens a lot of stuff in that stock pile that's oil and water.

[00:10:22] You know, any tankers at on the ocean that are between point A and point B count as a stock, pipe. You know, oil barrels that are in inventory or sorry, in transit on a pipeline similar, it's, you know, flowing but it hasn't been consumed and has been produced. So it's a stock, all of this kind of stacked together.

[00:10:39] You have roughly 8 billion barrels of stocks in the global system that we generally know about. But of that, only about 3 billion or so are actual commercial stocks in advanced OECD nations that we track. And even then that includes things like pipelines and everything else. So it's really the functional, usable, the workable inventory.

[00:11:01] It's probably more. One, one and a half billion barrels.

[00:11:05] **Nate Hagens:** And the point number three

[00:11:07] **Rory Johnston:** and point number three, and I should also say of that stock aspect, you know, strategic inventory is, strategic reserves are also part of this, that, when you have, you know, the, IEA through this crisis announced its largest coordinated strategic stock draw in history of 400 million barrels.

[00:11:26] out of the 32 i a member states, in the way I view the oil market, I view SPRs or strategic patrol and reserves as stocks, but not as proper inventory because the decision to build it an SPR or draw down in SPR is a discretionary policy choice by politicians, by policymakers rather than by, you know, the market per se.

[00:11:50] Whereas commercial stocks, I, treat essentially as the cumulative residual of this market. If it's oversupplied. They need to catch that and that needs to rise. If it's undersupplied, they need to catch that it needs to fall. And the final piece of this is after everything is said and done, and again, we can't draw down inventories to zero.

[00:12:08] If oil and water went to zero, there would be no global oil market left. That's just as simple as that. So the final step is if you can't fill in supply, you draw down too many inventories. Prices need to rise to destroy demand on the other side. And that is, I think, you know, just for even general scenario here, again, we're assuming Horus remains closed indefinitely.

[00:12:29] Let's say you need to destroy 10 million barrels a day of demand. That was roughly the average demand loss through 2020 through COVID over the annual average. but we would need to achieve that demand loss, not through kind of, you know, heavy handed, top-down government policies about no flights or lockdowns or whatever.

[00:12:51] We would need to do it entirely through the kind of more brutal logic. Of market pricing to say you push prices so high that people will consume less and that's the only way this pro, this market will solve. If it's not given other options

[00:13:03] **Nate Hagens:** or some combination. There may be some of that rationing stuff.

[00:13:07] So I'm, I haven't had an oily person on the podcast in quite a while, and I have like 20 questions for you, and now I have 40, so please, forgive me. So we talk about roughly 20, million barrels a day, and that the world uses 105, roughly.

[00:13:28] **Rory Johnston:** Yep.

[00:13:29] **Nate Hagens:** But there are a lot of countries in the world.

[00:13:31] If we, look at all the millions of barrels that we burn, a lot of those are burned internally in Russia and the United States, and Saudi Arabia and other places for their own industries and, people. So what's purchasable in the global market is only 50, 55 million of that total. So in some ways, that 20 million is a much larger percentage of the oil available for markets to purchase.

[00:13:59] **Rory Johnston:** Absolutely. And I think, you know, the vast majority of those barrels from the Middle East are historically sold into Asia. Mm-hmm. and that is where you've seen the kind of epicenter of this demand loss. And the other thing I should just note here is when we talk about demand destruction, I think it's important to kind of specify what we mean.

[00:14:17] 'cause I think it means different things to different people. I think when I think about it in general terms, like in, in a normal recession with high oil prices, like in 2022 for instance, what we would've talked about would be there are, you know, the two main types of demand destruction. So, price, elastic demand destruction.

[00:14:34] So pump prices is too high. So I decide to take a bus, or over a long enough timeline, I decided to purchase an EV to kind of remove that from my, or a bicycle, right. Exactly. Or a bicycle. And then. The other option would be income, elastic demand destruction. So high oil prices, stress, the global economy. you, the firm you work for goes bankrupt and you don't have a job to drive to.

[00:14:57] So you that, you know, there's a loss there as well. but on top of this, we also have this third kind in this crisis, which I think is unique, which is just given how large the shortfall in supply has been and how slow these barrels typically

move around the world. We've had this floor drop out of supply in Asia, and you've had a lot of demand destruction, per se, of like unfulfillable demand.

[00:15:23] But those individuals would pay more. If they could get a barrel. But it takes time. And one of the weird things with this crisis so far is that it's, moving at the speed of tweet, whereas oil tankers take a month and a half to transit around the world.

[00:15:37] **Nate Hagens:** Yeah. So we have a molecule shortage. but there's also, a trust and time and complexity aspects to all of this.

[00:15:48] And there's in, in many ways, I mean, I'm.

[00:15:55] Resolves quickly though on April 23rd. I just don't see how they're so far apart. Yeah. And I fear that between now and the time this episode airs, there will be new bombs and who knows what. But even if it were to end now, 'cause of the time lag, there's a pig in the Python sort of thing, that in many ways our culture has metaphorically hit an iceberg and the band is still playing on the top, you know, deck.

[00:16:26] **Rory Johnston:** Yep.

[00:16:26] **Nate Hagens:** And it seems like. Asia will be hit first. And there's rationing and Bangladesh and Thailand are closing schools to conserve electricity. And, you know, Philippines declared a national emergency and things like that. The us, which is largely energy independent that we can talk about, a lot of that also has to do with, imports of, gross oil that we combine with our light tight oil to make products.

[00:16:54] But we don't see it quite as much other than WTI Prices are around a hundred. but why don't you explain the, time the, fuse here that's going on, like

the ships have finally arrived. Most destinations from pre-war and now they're not arriving or they're arriving, less frequently.

[00:17:17] So unpack that for me, the difference between Asia, Europe, the us, Africa, et cetera.

[00:17:22] **Rory Johnston:** Yeah. So. The important thing to remember here is that these ships, like these tankers, take a long time to travel around the world. They do not move especially fast in the scheme of things.

[00:17:31] **Nate Hagens:** how long do they take?

[00:17:32] **Rory Johnston:** It depends on the region you're going, right?

[00:17:34] It takes longer to go. So of a tanker that left Horus, IM like, the day before the war started, it would take roughly three weeks for that ship to land in East Africa. Four weeks to land in East Asia. and again, I should say probably two, two to three weeks to land in India, five weeks to land in Europe, and then six weeks, seven weeks to land in the United States in Australia.

[00:17:58] So to this point, we, I've been describing this as essentially an air pocket that normally this system, normally this trade on the water operates like a floating pipeline. And I keep this, when we talk about the market in millions of barrels a day, it's because the system must flow on a daily basis.

[00:18:16] Refineries have to keep running on a daily basis. They're like giant, you know, flowing chemistry sets. Any interruption kind of makes that untenable. So this is why it takes time to get to where it's going. And now that those final tankers have landed and there's nothing behind them, but air now we move to that stage of, okay, now we're starting to draw down stocks

[00:18:39] **Nate Hagens:** and we're using the, emergency, by the way, strategic petroleum reserve to trick us into feeling that there is no real crisis.

[00:18:51] how far draw down are is the, US Reserve, do you know?

[00:18:54] **Rory Johnston:** Yeah. So prior to the crisis, it was just over 400 million barrels.

[00:18:59] **Nate Hagens:** Out of, full would be what?

[00:19:01] **Rory Johnston:** 8, 8, 9, give or take.

[00:19:02] **Nate Hagens:** Okay, so it was already below half.

[00:19:04] **Rory Johnston:** Yeah. So it got drawn down j by the Biden administration and prior to this, the largest SPR release in history, following Russia's invasion of Ukraine at that stage was about 180 million barrel at, 80, 180 million barrel total release.

[00:19:20] and that was the big one at the time. And the politics of this in the United States in particular are very, sideways because I think part of the reason, and one of the interesting things that we've seen with the U-S-S-P-R release under Trump is that they've actually had trouble getting the barrels out the door as quickly as you'd want in a crisis.

[00:19:37] And that's because they've structured them as these exchanges. And one of the authorities at the STR R is to either do an emergency release, like just, you know, dump them onto the spot market like what Biden did in 2022. This time because Trump spent so long through the past couple years, lambasting the Biden administration on drawing down those SPR releases or those SPR reserves.

[00:20:01] they've structured it as an exchange, but the challenge is that it puts more logistical and kind of risk on the count, on the counterparty, the person that would be taking that barrel. 'cause they need to basically contract for a redelivery, a return of barrels and kind with in kind interest. So it's actually slowed the pace of releases out.

[00:20:19] But overall in the, you know, when we're talking about 400 million barrel release, the IEA member states are, you know, they estimate that the total. Either explicitly government controlled stocks or commercially held, but government mandated stocks for these purchases. for its purposes, were roughly around 1.2 billion barrels.

[00:20:39] So this release constitu one third of total IEA reserves

[00:20:43] **Nate Hagens:** and the US is now down to how much, 800 million would be full. And we're down to roughly how much?

[00:20:48] **Rory Johnston:** So we were about 400 million, you know, 420 million prior to this. And we're probably down, let's say, by the end of this release cycle, just over half of that.

[00:20:57] So just over a quarter of the total reserve.

[00:21:00] **Nate Hagens:** So we're down to a 200 out of 800 ishish. And, I want to get back to Horus itself, but can you just briefly, because you're one of the few people that would actually know the answer to this, probably we can't draw that two, that 800 million to 400 to 200 all the way to zero because there's some minimum threshold that needs to stay in there.

[00:21:22] am I right about that?

[00:21:23] **Rory Johnston:** There could be some at the very, bottom. But most of this is basically, managed by kind of, you know, pushing Brian into the system Okay. To basically push the oil up. Yeah. but one of the criticisms that has historically been leveled about these releases and was heavily criticized, and, you know, both Trump and Energy Secretary Wright heavily criticized the by administration for this large release, was that these, they claim that these releases damage the reservoirs, but in actuality, it's actually the funny opposite that these, ca, these reservoirs, these caverns, which are essentially dissolved salt caverns, were specifically designed for big chunky releases all at one time.

[00:22:04] And what's actually damaged them is that prior to the Biden administration's release or this release, most of the releases were small and kind of back and forthy, you know, there was a hurricane, so we'll release 40 million barrels or whatever. It's those small releases that were actually more damaging to the reserves.

[00:22:18] Got it. And the large ones.

[00:22:20] **Nate Hagens:** So just to put in context, the strategic petroleum reserve has roughly 200 million barrels now. The United States uses two 20 million barrels a day, so without any other sources. And we do have other sources. That's 10 days of our production. I mean, our, consumption, and this isn't an emergency.

[00:22:40] I would hope that those would be truly used for an emergency, but I digress. How are those ships that are now, we are six or seven weeks past, the, start of the closure. What's happening, with the loss of barrels, and how does that translate to actual energy shortages in China, Asia, Africa, et cetera?

[00:23:01] **Rory Johnston:** Part of our challenge is that we don't have complete total visibility on the entire global stock system. So it means that we can only kind of look at what we can see, and it just for. Let's talk about the kind of technology

of it for a second, because it's actually quite interesting. a lot of these estimates are of, let's say, stock changes are derived by satellite imagery because for those that aren't aware, crude oil storage tanks typically have floating roofs.

[00:23:26] And this is to basically make it so that you, if you had a, fixed roof tank and these petrochemicals are volatile elements, they would build up gases in that empty space, which is bad and explosive. So you have a floating roof. So it kind of goes up and down with, the level of crude in the tank. And by using sar, satellite technology or even just optical, you can measure the angle or size of the shadow cast along the top of the roof.

[00:23:53] And estimate based, on that, how full it's, so that is how we get these high frequency estimates of crude oil inventory in the global system.

[00:24:01] **Nate Hagens:** I didn't know that.

[00:24:02] **Rory Johnston:** It's very cool. The challenge is that we can't do the same for refined products. 'cause refined products like gasoline can't have a floating tank.

[00:24:09] So we have to wait on government. Statistical estimates, survey estimates typically for knowing how much is there, so we know how much crude and product is on water by tracking tankers, we know generally how much crude is in global visible commercial aboveground storage tanks. We can't see underground storage like the SPR, anything else.

[00:24:28] So, but this is essentially what we can see. And what we do know is that through the first, call it two weeks of April, the global system between visible crude inventories and tankers on water drew down at a pace of roughly 10 million barrels a day for the first two-ish weeks, if that's roughly what we would expect to see.

[00:24:51] In a release or, in a, supply shortfall of this magnitude. And again, presumably there are also product draws elsewhere that we can't see or can't confirm yet. Typically in the oil market, I like, normally my life is following like monthly data releases and kind of making charts. And most of the data we use is lagged by two months.

[00:25:11] Unfortunately, a two month lag is before the war and quite non-relevant to us anymore.

[00:25:16] **Nate Hagens:** So we

[00:25:16] **Rory Johnston:** really don't know. So that's the challenge.

[00:25:18] **Nate Hagens:** So many people are likening this, Horus situation to similar events in the seventies and eighties, and how accurate to think those comparisons are and where does this story, diverge from the past?

[00:25:31] **Rory Johnston:** Yeah, so I think that in terms of the realized loss of supply today, it's larger than anything we saw in the seventies, in the eighties. through either the kind of 73 oil embargo or the 79 Iranian revolution.

[00:25:48] **Nate Hagens:** And, here we are with stock markets at all time highs,

[00:25:51] **Rory Johnston:** and here we are with stock markets at all time highs.

[00:25:53] So let's unpack that. 'cause I think that, I think there's two things that are important to kind of note. First is that relative to the 1970s, the world is much, much, much more energy efficient and much less oil intensive today as it was then. So as a general thing, you know, each loss, you know, a, you know, pump prices going up is, you know, aero's disposable household income less today than it did back in the seventies, just in terms of the portion of the budget that goes to those products.

[00:26:25] So I think there's, on one level, we're less dependent today. On the flip side, you can almost say each barrel of oil today supports more economic activity Yeah. Than they did back then. So it's, it depends on which way you're looking at it. I think the other thing, so the, I published a report this morning called, the sanguine Straight Stoppage, talking and trying to steal, man, why the oil market has so far reacted relatively optimistically to the largest supply shock in history.

[00:26:55] **Nate Hagens:** Well, I mean, I mean, it's still doubled double prices. It's double the has doubled in a couple months, so it hasn't gone up to $200. Yes. But it's still quite a sh quite a shock.

[00:27:05] **Rory Johnston:** Yes.

[00:27:06] **Nate Hagens:** I think it's the financial markets that are, missing some aspects of this. The oil market is different. But please tell me your conclusions

[00:27:13] **Rory Johnston:** going into this war.

[00:27:14] or at least immediately prior, we started the year around $70 on a barrel of Brent. Today we are sitting at, on my screen as I'm looking, $103 and 50 cents. That is high, but it is not. As high as we would've expected it to be after two months of the largest supply shortage in history.

[00:27:33] **Nate Hagens:** And, WTI was in the fifties before this, and I don't know where that is this morning.

[00:27:38] Nine 90. So,

[00:27:39] **Rory Johnston:** yeah. And I think, and I, and, probably just, shy of, Brent right now, two main things drove this in my opinion. So the first thing, and I always stress this, and I think in some ways my own disbelief in the pricing

violated my own cardinal rule of the oil market, which is that oil markets and commodity markets are not actually that good at being forward looking.

[00:28:00] When we look at things like the equity market, we look at broader markets. We always talk about them as being forward-looking. it doesn't matter what's happening now, it's what's going to happen. Oil markets and commodity markets where have, where they have physical spot market clearance dynamics, require the curve, which, so we're talk about the futures curve to incentivize a closure of whatever gap exists in this spot market.

[00:28:25] So if there's an oversupply. Basically you bid down or you discount spot deliverable or ASAP deliverable barrels relative to the future,

[00:28:36] **Nate Hagens:** which in an extreme example, six years ago, oil went to negative $30 a barrel for a brief period, which makes no long-term sense,

[00:28:44] **Rory Johnston:** no long-term sense. But, and again, like no one could look at that and say, well, well that's weird, you know?

[00:28:49] but what it's essentially doing is when there's an oversupply in the market, you need someone else to take it and store it for you. And storage costs money, it costs the tank, you know, rental rate, it costs, the financing rate, insurance, all that stuff. And the, so the deeper the contango, we call it this discount on spot barrels.

[00:29:10] So you have an upward sloping futures curve from present to future. People typically think that's a bullish view. 'cause the market's saying prices are gonna rise. I think it's actually the opposite interpretation. It's saying right now prices are really, weak and well oversupplied, so we need to figure out a way for the market to pay for that storage.

[00:29:29] So if you were a holder of inventory, or you, had empty tank space and you were in the bottom of 2020, you could buy a barrel in the spot market. You could sell the same barrel a year later or six months later. And as long as your storage cost was less than that spread, you could print money risk-free functionally.

[00:29:49] Yeah. And that's how the market clears this oversupply in undersupplied markets and what we call backwardation, where the curve is downward sloping. So you have a premium on spot deliverable barrels. Mechanism is the same, but I think it's slightly less counterintuitive because it's not like you're paying or not storage.

[00:30:07] What you're really doing is you're creating an economic opportunity cost for anyone that holds storage, not to release the barrel into the market. Because in the same way, if you had a barrel and you didn't need to consume it this month, you could sell that barrel to the market today, buy the same barrel back in a month or two, and basically rent the barrel to the market.

[00:30:26] And that earns you, kind of, it returns. But I think that is, that, that's the way this market clears and the way the market has to clear.

[00:30:33] **Nate Hagens:** So relative to before the crisis, you said Brent went from 70 to 103 and WTI went from the upper fifties to around the same. How much is like a year out or 18 months out, how much has that gone up?

[00:30:48] Oil prices?

[00:30:49] **Rory Johnston:** I'm actually just gonna, I'm gonna pull you up. Z seven, which is December, 2027 because I think that's a nice, round number. So that went from, at the, be at the end of February was around $65 a barrel. The curve, I should note, at the beginning of this crisis, the curve was very flat.

[00:31:06] we are actually transitioning between an undersupplied market of backwardation to an oversupplied market. But to your question, so we've seen a $10 a barrel increase in December, 2027. Deliverable rent crude from 65 to around $75 a barrel.

[00:31:23] **Nate Hagens:** Okay, here's why I want to go next on this. let's put a pin in that, because I wanna come back to that.

[00:31:29] So, in terms of infrastructure damage in the region around Iran, uae, Kuwait, all, that area, what sort of damage has already happened and what are the biggest risks to future infrastructure and production if this conflict continues?

[00:31:48] **Rory Johnston:** So let's split it in two. So I think let's talk about what we already, what's already happened, I think thus far.

[00:31:56] To our knowledge, there has not been extensive damage to upstream oil and gas infrastructure. So the wellheads, but I should say with a massive caveat here, that many of the Gulf monarchies we're talking about some of the most kind of heavy handed states in the world. they have kept the knowledge and information about the extent of damage to industry infrastructure very, tight to the chest.

[00:32:18] **Nate Hagens:** We'll have to split that question into, there hasn't been damage to the wellheads, but if they're shut in, there might be damage to future production, especially in the older, not super high tech, wells and fields. Yes.

[00:32:34] **Rory Johnston:** Yeah. So one, the reason that people don't like shutting in production is because, particularly in these conventional wells, which most of what we're talking about, the vast majority of what we're talking about in the Middle East is, you know, the oil comes up via natural pressure in the reservoir.

[00:32:48] if you start. Closing that down willy-nilly, there's a chance that you could spoil that pressure. but there's also, you know, potential that you can actually get more pressure at the other side, right? So there's, there is both sides. I think if you were in more areas of the world, I think this would be a bigger concern.

[00:33:06] But given that these wells in the Middle East are the ones that are, have historically been the most reactive to say OPEC policy, if we're gonna have anyone shut in production, it should be the Saudis and the Emiratis because they have a track record of being able to turn this stuff back on.

[00:33:20] **Nate Hagens:** But what about the Iraqis and the Iranians?

[00:33:24] **Rory Johnston:** Iraq and Iran, and even to a degree, Kuwait are a bigger open question. Iran, to our knowledge, has not had, has not been forced into extensive production shut-ins yet. Now, one of the weird things of the crisis thus far is even though the strait has remained closed, Iran has continued to export oil for the entire crisis up until very recently, the imposition of the blockade.

[00:33:41] But that is, that's weird. What we have seen confirmed damage is to what we call downstream infrastructure, so refineries, petrochemical facilities, et cetera. That is, I think, the biggest open question that I have, and I think that we're only really gonna know is when we, get new empty tankers into the Gulf, when this thing finally ends, and let's say Kuwait, which is a large historic, exported, refined products.

[00:34:09] We need to be able to see are they loading crude or are they loading diesel? And that I think is gonna be the only moment that we're really sure of the extent of the downstream damage to the, assets.

[00:34:21] **Nate Hagens:** And we've largely been speaking about oil, but there's a lot of natural gas that comes through the strait as well.

[00:34:26] And I know there's been some, damage to some LG export facilities and Qatar and, elsewhere. do you have any color on that?

[00:34:37] **Rory Johnston:** Yeah, so my, only caveat here is that while I have, historically covered natural gas, it is not my main thing. So I know just enough to be dangerous. But to this point, the only notable upstream damage we've seen to infrastructure in the region has been in Qatar.

[00:34:51] And this was about the third week of the war, when Israel attack attacked, Iran's South Pars Gasfield, which Iran shares with Qatar when Israel attacked and Iran counter attacked. The damage done was much more extensive and what we've seen confirmed by the cutter energy, CEO, to Reuters, said that it reduced cutters LNG export capacity by 17% for up to five years.

[00:35:18] And I think that is when we talk about the risk here, when we talk about the risk that fighting could reignite in the worst case scenario, the big, risk to the market is that we see that 13 million barrels a day of shown production. Right now we're talking about that recovering in weeks to months.

[00:35:35] **Nate Hagens:** Well, it could be, 20 million because both ends of the pipeline in Saudi Arabia could be under fire easily as well.

[00:35:42] **Rory Johnston:** Absolutely, and I think most notably we know that, you know, the, Saudi East West pipeline terminates in the Red Sea, and those ships all go through the Bab Elman, Deb Strait, which has to pass through the Houthis, which are a long time ally of Tehran.

[00:35:57] So this is something that we still have a lot of things on our scorecard of ways that Iran could still escalate the crisis that it hasn't yet taken.

[00:36:06] **Nate Hagens:** If Frank Herbert could see this now, there are so many reasons to immediately stop this crisis, and yet,

[00:36:14] **Rory Johnston:** yep.

[00:36:14] **Nate Hagens:** I mean it's, well, we don't have to get into, I mean, there, there are religious forces, on all sides that are pushing for something, but it's from a understanding the underpinnings of civilization standpoint and a risk averse standpoint, this needs to stop like right now.

[00:36:32] **Rory Johnston:** Yeah.

[00:36:34] **Nate Hagens:** so with your caveat that you're no longer a natural gas specialist, but let, me ask you this. If you look at the forward strip for 2027 natural gas, the United States prices haven't budged. They're like $3, per MCF per million, keep your feet. And in Europe it's in the mid twenties, like 21, 20 $2.

[00:36:58] So it's like seven to nine times more expensive in Europe.

[00:37:02] **Rory Johnston:** Yep.

[00:37:02] **Nate Hagens:** So in this, unless this situation resolves, this is hella big economic wallop to the European countries.

[00:37:12] **Rory Johnston:** European and Asian, essentially anyone that depends on LNG imports. And again, my caveat that I'm not a gas guy anymore, but I know just enough to kind of explain this part.

[00:37:21] I think one of the weird things about natural gas is that LNG, like the liquefaction process, depending on what you're looking at, it could be viewed as kind of upstream of the LNG sector or midstream, or even downstream for the natural gas sector itself, let's say in North America where LNG is a relatively new entrant to the system.

[00:37:43] So the main thing that's important for us natural gas, is the balance of supply and demand in continental North America where LNG exports effectively are a demand sink, from that equation. But we just have so much gas in North America that even that, you know, we can't push out LNG fast enough. To close that.

[00:38:04] So you're gonna have this massive gap. And we have seen this between North American prices, gas prices, and Asian prices, and, European prices, which in the context of the current moment, particularly in the current moment of let's say, you know, massive scale AI investments and all this stuff about power has become a very, kind of particular advantage for North American industry in this crisis today.

[00:38:30] **Nate Hagens:** Almost makes you think it's, purposeful to win the AI race. Chuckle.

[00:38:37] **Rory Johnston:** Chuckle. Yeah, I think the, I hear this a lot, and it's always, you know, I should say nothing's impossible, but I would say that my prior on this is that President Donald Trump never meant to get into this war in this kind of state.

[00:38:50] I agree with

[00:38:50] **Nate Hagens:** that.

[00:38:50] **Rory Johnston:** I think a lot of people, there's a propensity to say it's all about ai, it's all about strangling China. It's all about flexing us energy dominance on Europe or whatever.

[00:38:59] **Nate Hagens:** It's all about humans and energy and optimal foraging and delusion and war, and it's just a modern and healthy manifestation.

[00:39:09] Yeah. Hubris. I forgot that one. And risk

[00:39:11] **Rory Johnston:** homeostasis. Exactly. I mean, I mean, Donald Trump thought this would be Venezuela 2.0, right?

[00:39:15] **Nate Hagens:** Yes. So this is the, downside of a real success like Venezuela success. Yep. Because then you get emboldened, Hey, let's do this in the Middle East, and now look at what's happening.

[00:39:27] Exactly. So, getting back, what, do you think the worst case, best case, and most likely scenarios that you anticipate for how the Strait of Horus situation resolves With all the caveats on politics, that we don't really have an idea what's gonna happen. And if we do see the best case emerge, like a total end of cessation of.

[00:39:47] Violence and a ceasefire starts before your interview is aired. How long would it take for the circulation of oil and gas to get back to some sort of normal situation, if that's even possible? And then I have a follow up to that.

[00:40:01] **Rory Johnston:** Yeah. So let's look at the absolute best case scenario. So the latest we've heard is that President Donald Trump believes the ceasefire lasts to Sunday.

[00:40:11] again, we're, we're recording this on third, we're on Thursday. On Thursday, yeah. So that's the latest is that it goes until Sunday. And that he's very

confident, like he always is, that we will have a deal signed by Sunday night. So in the most optimistic world, we sign a deal Sunday, and by come Monday or Tuesday, the straight is completely reopened and we start getting tankers out and tankers in and everything else.

[00:40:32] **Nate Hagens:** Okay. I, think that's implausible, but I hope that's the case. And if that happens, what, do you think?

[00:40:38] **Rory Johnston:** Yeah, so I would agree that it's implausible. but let's kind of go through what it would look like, because again, this is the best case scenario. In that case, we would, it would take. We still have almost a thousand ships that have been trapped in the Gulf now for upwards of two months.

[00:40:54] We're talking about 20,000 seafarers that did not plan to be stuck in the Gulf. This is a humanitarian crisis on top of everything else.

[00:41:01] **Nate Hagens:** What are those people doing? Like just playing,

[00:41:05] **Rory Johnston:** sitting in, so waiting

[00:41:05] **Nate Hagens:** solitaire on their phones and do they get to go into Dubai and have a shore leave or what?

[00:41:12] **Rory Johnston:** Well, so that's actually been, it's been a major, kind of humanitarian crisis because the many of the Gulf states have, refused these crews.

[00:41:20] Oh my god. Those poor people. So these, we, these people are stuck in no man's land and international water. And for many of them, they, I mean, you, don't have food stores or fresh water stores for that long. So people, they were, have been so to the credit of these, golf sites, they have not let them land per se, but they have been.

[00:41:40] Sending crews and ships out to resupply these vessels.

[00:41:44] **Nate Hagens:** So that in itself is one of those, second, third and order effects of this that is inflationary because this is a good portion of, the, labor pool for that industry. And they're gonna go home and be like, I ain't going through that again.

[00:42:01] **Rory Johnston:** Yeah, de def definitely not going to the gulf again.

[00:42:06] so I think that if that, so let's say upwards of a thousand ships that need to clear out, prior to this, in the best case scenario, we had kind of 130 to 150 ships.

[00:42:16] **Nate Hagens:** Wait, a minute. A thousand ships and only 20,000 people. There's only 20 people on each of these ships.

[00:42:21] **Rory Johnston:** Yeah, a lot of them have fairly small crews.

[00:42:24] okay. Because I mean, in, the, scheme of things, it doesn't take that much to captain and direct these massive ships, but. Again, it needs enough people and yeah, that's, so they basically all live in those kind of, you know, most of the ship is just holding oil, as an example. Yeah. The people are all in that little, command pot up top.

[00:42:44] So it's gonna probably take a month or two for those ships to get out. Even after this is all done, it's gonna take a while to clear those ships out again. They've all been trapped and stuck. Then there's also a question, 'cause we don't just need to get those ships out. We need to get new ships in. so there's two issues with that.

[00:43:01] You noted one, which is who wants to sail back into, who wants to sail back into the gulf? Probably not. The people that've been stuck there for two

months. So that's gonna be a, behavioral inhibiting factor Also, there has been a large exodus of tankers from the region for a while. They were all waiting on the, we'll call it the good side of Horus, the world's side of Horus was waiting for the street to reopen, waiting to go and refill.

[00:43:27] Tanker rates, the kind of, you know, the, price charged by these tankers are very high given. There's a bunch of them trapped in Horus and they're like, well, we should do something with the time. So many of them have diverted away from Horus. Most of them have diverted to the US Gulf Coast, whereas the main location of available swing supply in the world now is North America.

[00:43:48] Back to this question of kind of North American energy dominance. I'm up in Canada, so some of those barrels of Canadian I should note.

[00:43:55] **Nate Hagens:** But even there, and I, there's questions embedded in questions here, and I, still want to get to your best case, but even there, we are not a net exporter of oil.

[00:44:04] **Rory Johnston:** Yes.

[00:44:05] **Nate Hagens:** We are a next net exporter of oil product, but our refinery inputs are like 30 or 40% international.

[00:44:13] I mean, other oil that we add, our domestic supply. And then we have a net gain. So net we're exporting product, but we're not independent on that front. So there's a little bit of a miscommunication, I think, in the news on that.

[00:44:26] **Rory Johnston:** Yeah, so what we talk about with the United States is it's a net petroleum exporter, and some of those are refined products, but the vast majority of the difference between, you know, crude production proper, which is around 13 million barrels a day for the United States.

[00:44:40] **Nate Hagens:** Yep.

[00:44:41] **Rory Johnston:** But then on top of that, it has seven to 8 million barrels a day of natural gas liquid supply.

[00:44:45] **Nate Hagens:** We're an exporter of baggies.

[00:44:48] **Rory Johnston:** Exactly. I mean, a lot of this is petrochemical feed for, China in particular. And this is essentially, it is, it's a liquid. So it's counted in that 105 million barrels a day market, but it is not crude oil specifically and is generally extracted from what we call heavier streams of natural gas, where it has these molecules in it.

[00:45:06] 'cause natural gas itself is methane and the, you know, you add kind of carbon molecules to that. And then you get, you know, you know, C two, you've got ethane C3 propane up, you go to, butanes than pentanes. And all of these are considered natural gas liquids. Some of them are more useful as oil than others.

[00:45:25] Like Pentanes for instance, is, often referred to as natural gasoline. But ethane is so close to natural gas. It's either used as petrochemical feed or we, even if, you know, ethane prices are cheap, we, see what's called ethane rejection and they basically keep it. In the natural gas stream. It just increases the heat content slightly of natural gas.

[00:45:45] But this is, this kind of, you know, the, line between hydrocarbons is very, blurry 'cause they're all functionally the same thing, just manifesting in different forms ever, you know, straight from natural gas all the way to coal.

[00:45:59] **Nate Hagens:** I, wanna get back to the best case, worst case. but just on this point, is there a risk if the situation continues, that the US will be out of certain, refined products this summer, for example?

[00:46:14] And, sub, question to that, is California different than the rest of the us?

[00:46:19] **Rory Johnston:** So, let's start with the California question, because I think California is the most directly exposed to gulf flows given it's in the Pacific Basin. And there aren't really any pipelines that connect it with the rest of the United States.

[00:46:28] It's kind of an island from the perspective of oil trade. Prior to this crisis, it was even more of an island because you couldn't reliably ship. products say they were exported from the US Gulf Coast, the West coast because of this nasty thing called the Jones Act, which prevented tankers, ba the only tankers that could service trade between US ports needed to be built.

[00:46:51] The United States owned by US companies and crude by Americans, which is a v is a vanishingly small portion of the global tanker fleet. And basically nothing, you know, economical. But one of the things that the White House has done through this crisis, it has temporarily waived the Jones Act, which is a big deal.

[00:47:09] And one of the things this does allow would be to allow for, say, some product from the Gulf Coast to transit to the Panama Canal and up into Pad five or what, you know, the West coast of, the United States. so I do think that in general, while you do get some, well, the United States does get some oil from the Middle East.

[00:47:30] Of the roughly, let's say six-ish million barrels a day of crude oil imports that the, that US imports, versus that kind of 13 that it produces. Two thirds of that comes from Canada. So I'm up in Toronto, so I spent a lot of my time on Canada, US oil trade. And one of the unique energy security elements of that relationship for the United States, is that the vast majority of those oil exports

from Canada to the United States go on fixed pipelines, that terminate largely in the Midwest of the United States through the Chicago area.

[00:48:02] some of it does go down as far as the Gulf Coast, but generally most of that is captive from the perspective of the current market. So those barrels can't be as easily incentivized away. So when we're talking about the impact of this shortage on North America, it really comes down to a question of trade exposure.

[00:48:20] So you're gonna see basically global prices at the West Coast and the East coast of the United States, barring any. Potential trade Tom Foolery from the Trump administration. 'cause they could, for instance, ban the export or put a quote on the export for fine products, which could muck this up a little bit.

[00:48:38] But in general, I would say that, and my expectation is over a long enough period of time, if those trade Lincolns can all work, most advanced economies in the world likely will not see kind of structural shortages that because you have a higher propensity to pay a lower price sensitivity in these regions relative to poor areas of the global south.

[00:49:00] Which, if this, system, if this crisis was allowed to play out for a long time, you would see all of those. Global South barrels pulled into the global north. So Global North would see very high prices, but the global South would see functionally outright physical shortages.

[00:49:16] **Nate Hagens:** Hasn't that story repeated, over time?

[00:49:19] Let's spend a minute on that. you and I, both our, base, I mean, there is a best case that by the time this interview airs, there's a ceasefire and it continues and we begin to have this. Fingers crossed,

[00:49:29] **Rory Johnston:** Nate.

[00:49:30] **Nate Hagens:** Yeah, fingers crossed. The most likely case is that this continues. and I don't want to talk about the worst case, but we should maybe mention it, a little bit.

[00:49:40] But tell me about the, the less developed countries and the different price sensitivity and the fact that they will be priced out of barrels, especially those countries that a meaningful percentage of their GDP is energy imports. What, does that look like? And maybe name some specific countries.

[00:50:01] **Rory Johnston:** I mean, it's gonna be a catastrophe. I think that like, very simple, it will be devastating. when we see, when we think about how trade fulfills, demand and balances national levels, essentially what we, you think about, oil is always priced on the margin. So what you, and so you need is you need the marginal demand from say, a country like, you know, Thailand or Pakistan.

[00:50:26] They need a high enough price to incentivize a tanker somewhere in the world. Travel there instead of somewhere else. So as soon as a barrel's own water, it's gonna go where the highest price signal is right now. Those are still largely coming from Asia because that's where the, shortages have physically hit.

[00:50:44] But we know that these countries do not have the pricing power to compete with Europeans or North Americans, or, people in Japan or Korea or wherever.

[00:50:55] **Nate Hagens:** And part of that is because they can't print their own currency in a, problem. they have to use hard currencies to buy the stuff

[00:51:03] **Rory Johnston:** Part.

[00:51:03] Partly that, but I also just think like the average, I mean, even if you have wealthy, like very wealthy people in these countries, which all these countries do have wealthy people. Yeah. they're not consuming the marginal barrel at the gas station. Right. So even if they can afford it, because that average marginal demand isn't there, they just won't have anything at the gas station.

[00:51:22] And we've already started seeing this, like there was a particularly infamous example now going back to 20 21, 20 22, when natural gas prices were blowing up globally, even before Russia's invasion of Ukraine. but there was a, there were a couple instances where a tanker, LNG tankers that had been going, had been scheduled and committed to going to Pakistan, basically broke those term contracts, paid a penalty and then sailed to Europe.

[00:51:47] And the difference between the prices in Pakistan and Europe were so large that they could easily kind of justify the breakage fee as part of it. It's just kind of this like the brutal logic of a kind of a freely traded, capitalist global system.

[00:52:01] **Nate Hagens:** Could you unpack with a few sentences of what you mean by the word devastating?

[00:52:06] **Rory Johnston:** Yes. I think that, let's look at, let's look at Indian Pakistan as an example. When we talk about petroleum demand here in North America, we're typically talking about gasoline. We're talking about jet fuel, we're talking about being mobility, things that help make our lives easier. But if we can't drive for the day or the week or whatever, there are alternatives, it's harder.

[00:52:30] But we will figure out a way to get by. In India as an example, between, a fifth and a quarter of total petroleum demand in India comes in the form of LPG. So liquified petroleum gas, largely propane, and is used for home cooking fuel.

and I think that's the big difference here is there's a difference between not being able to drive your car and not being able to cook food.

[00:52:52] So when we talk about the consequences there, the alternative is wood burning in your house burning and animal dung. Yeah. And I think that is, there is a, like a, you know, a hierarchy of need here and much of the global south uses petroleum for much more kind of life necessary processes rather than convenience based ones.

[00:53:14] Yeah. And I think that will be the difference is, I mean, in some ways, thank goodness this is happening during the summer, because if it was happening in the winter, you would have an even worse situation because you would then have a more demand on heating fuels. so hopefully this is just a summer thing and it doesn't extend through the winter because I think gets even worse again.

[00:53:34] **Nate Hagens:** Well, the other thing, and again, we're gonna run out of time before I run outta questions, but I am hopeful, and I've actually framed it in a few of my monologues recently, that this is a dress rehearsal and we treat it as such. because one of the core themes of my work is that our culture is energy blind.

[00:53:52] We don't realize how powerful this stuff is in supporting our, current lifestyles. And I think we take it for granted, and this may be like one of those times where we start to appreciate what energy does for us a little bit more and maybe make different decisions about the future. If, it's possible we could have a cultural learning moment these days.

[00:54:14] **Rory Johnston:** Yeah, and actually just, quickly on that, because I think in some ways people think about this crisis we're currently facing in the same kind of, that it rhymes with 2022 because that was the last energy crisis everyone

has in their minds. I think it's really important to note the very, big differences between those crises because I think people are flattening them as the same thing.

[00:54:34] And I was still having a conversation the other day where someone was like, well, in 2022 everyone was all worried and oil prices ended the year lower. So like they'll probably just do the same again for perspective here. in 2022, the peak of concern was when Russia published its oil market report.

[00:54:53] It's kind of the most watched industry kind of fundamentals outlook, in April. And they warned that we could lose 3 million barrels a day of Russian production from the global system. The. We are already at more than fourfold that. Yeah. consequence, and I should note, we never actually realized that level of Russian supply loss, we only maxed out at maybe a million barrels a day for two months before it recovered.

[00:55:14] **Nate Hagens:** So maybe the, market's reaction to this is similar to Trump's reaction to Venezuela, project

[00:55:22] **Rory Johnston:** I think hugely so, yeah. It's very informed by that. So anyone that's like not a deep barrel counter Yeah. Is like, ah, well these things rhyme. They'll turn out the same and you know, there's a chance they still could, but for very different reasons.

[00:55:34] **Nate Hagens:** There's also a geopolitical aspect to this that, my work, likens humanity to a, metabolic Superorganism with energy as the veins and the arteries, the hemoglobin that goes through our veins and arteries. And I, think now that this has happened, even if a ceasefire happens, we have this, fracturing of the Superorganism now between east and west and energy security and, access to molecules and, materials and, commodities and resources.

[00:56:12] The game theory has shifted now forever. And, so I think part of the, future strips and oil and gas and everything now there's a, who's partnered with who and who has contracts and military and I think it's, changed our world forever. and, how do you think, how, what do you think about that?

[00:56:34] **Rory Johnston:** Yeah, and I actually think this is a great moment to get back to our kind of optimistic scenario because in the, most optimistic scenario, this ends, right? Yeah. Already we've had almost 600 million barrels of unproduced oil in the system, accounting for that lagged return. Even the best case scenario of Horus reopened May 1st.

[00:56:53] we're looking at upwards of a billion barrels of oil not produced this year. That's the best case scenario at this stage. Okay? We're talking 10 days of global consumption equivalent. so I think that's a lot of oil. And again, relative to say maybe like 3 billion barrels of OED commercials, stocks, right?

[00:57:09] That's a huge chunk of it and a mass, even larger chunk of working, inventory space. But in this scenario, I think what we see coming out of this is like fundamentally, like I, I obviously think this is a bullish development for the near term oil market. I would say, one thing I'm absolutely sure of is that relative to, if you had asked me this question on February 1st to today, my view on future demand growth for petroleum products, particularly in Asia, is much weaker today than it would've been three months ago.

[00:57:41] Because they're going to push hugely aggressively as PO as fast as they possibly can, both to diversify their sources of supply away from the Middle East to reduce their overall dependence on petroleum imports. Following the kind of example of China where you've seen the strongest push for electrification of transport, not for environmental reasons, but for energy security reasons.

[00:58:04] Yeah, and I think you're gonna see a lot of people follow suit on that, and you're also going to see a huge build out. Strategic petroleum reserves the world over. Yeah. If anything, they had been falling out of favor. I mean, it was 50 years ago. The, oil crisis in seventies were so long ago. We have shale now who needs to worry about energy security.

[00:58:21] **Nate Hagens:** And I, think for people paying attention, they're gonna try to build up their own energy security. Whether solar panels or tanks with, you know, diesel or what, I mean, people are gonna take this into their own hands at a local, community level, I suspect.

[00:58:37] **Rory Johnston:** Absolutely. And I, think Amy, there's, so many things.

[00:58:40] This is going to, this is gonna spur, I think you're gonna spur additional, kind of national oil interest, national oil company interest from Asia mm-hmm. In North America, or America's supply sources. Anything to diversify away from the, from, the Middle East,

[00:58:56] **Nate Hagens:** just as a one sentence. Statement, net.

[00:59:02] Net. This is good for Canada.

[00:59:05] **Rory Johnston:** net. This is good for Canada. Yes. I think that net, particularly given the fact that the main political project of industry in Canada right now is to increase West Coast, kind of non, you know, capacity that doesn't go through the United States, that goes straight to the west coast.

[00:59:18] Right now we only have the Transmountain pipeline system, but they're looking to build another big pipe to the West coast specifically for this purpose, to satisfy Asia and to kind of reduce the US monopsony on Canadian crude.

[00:59:32] **Nate Hagens:** What's a monopsony again?

[00:59:34] **Rory Johnston:** A monopsony is the opposite of monopoly. So a monopoly is a concentrated, concentrated seller.

[00:59:39] A monopsony is market power in a concentrated buyer, in this case the United States.

[00:59:43] **Nate Hagens:** The last time I saw that word, believe it or not, was in a Scrabble game like 10 years ago. so net with a big asterisk though, net positive with a big asterisk, which is that, our administration doesn't, try to consume Canada to merge all our refiners in different sorts of oil product.

[01:00:03] **Rory Johnston:** Yes, I, would say, for my own national, in my own national view on this, I in some ways not the worst thing that the White House is distracted right now, you know, from Greenland, from wherever else. And I think after this, the view was that they're gonna roll over on Cuban next. So we're gonna see what happens.

[01:00:18] **Nate Hagens:** But it is an energy, you know, energy is, wealth of nations. ultimately things are decisions and grand trends in the next 20 years are going to circle around energy.

[01:00:31] **Rory Johnston:** Absolutely.

[01:00:32] **Nate Hagens:** so let me just put you on the spot. What about the worst case?

[01:00:37] **Rory Johnston:** Well, we've done best case scenario. Yeah. We're gonna do.

[01:00:41] Worst case right now. Yeah. And then I do wanna also mention what I think is most likely to happen to this crisis, please. so the worst case scenario is that ceasefire talks fail. we've seen, we've already seen, the United States, like this

morning, Trump was talking about shooting and killing any Iranian boats trying to lay mines.

[01:01:01] There have been reports that are on, is trying to lay additional mines through the straight of four moves to facilitate more control. Anytime you have people, again, even during this is during a ceasefire and they're still shooting at each other, that can spiral. If we see the ceasefire collapse, if we see return to outright hostility.

[01:01:20] we've seen reports, I wanna say a week or two ago from the New York Times that was, indicating that Iran may have upwards of half of its reserve stockpiles of drones and missiles still remaining in the country and operational. they can do more damage. And what we have seen thus far is that most of the attacks have focused, I think, arguably in a way on.

[01:01:40] Kinda more terrorism in like, the truest sense, like they've been having civilian infrastructure in, the Emirates. They've been trying to sow fear, but they have been pretty restrained thus far on hitting upstream oil and gas infrastructure because they know that is the kind, their ultimate Trump card here.

[01:01:58] we saw an attack from, it's still never been a hundred percent confirmed, but everyone knows it's Iran, in 2019 on the Saudi oil stabilization facility of at AB Cake, which is the world's single largest oil processing facility. If they were to knock ab cake out of commission, that's like, like, that's like 9 million plus barrels a day of capacity off the market like in a snap.

[01:02:22] they can do damage to these upstream facilities. And if this goes from a situation where it is a weeks to months recovery to a months to years recovery for this much supply, then we end up in that scenario where like $200 plus crude is one guaranteed. And we would need to basically destroy widespread,

widespread, demand across the board, which means recession in the global north and potentially depression conditions in the global south,

[01:02:49] **Nate Hagens:** and potentially depression conditions in the global north because of how much financialized our system is.

[01:02:57] it's a little bit of a musical chair situation. Yes. Okay. Keep, going there.

[01:03:02] **Rory Johnston:** Okay. So like this keeps going, right? Because it's not just, it's not just the oil and gas. You've got fertilizers, you've got helium for chip manufacturing, you all of this stuff. It's like the united, the, Middle East is critically important for global feed feedstocks across the board.

[01:03:17] So this would be a massive downshifting of the entire global economy forced by supply restraint. Most of the time we've been talking about global crises, they have been demand crisis, which is why, like in, in COVID for instance, the reason we were able to get through so much of it. Relatively so un economically damaged was because of massive government fiscal interventions to maintain demand support in the global economy.

[01:03:45] In this, you can't do that because there just simply isn't enough supply. so doing that would not only not help, it could make the situation worse. By further spiraling, kind of supporting demand and further spiraling prices higher. And again, then it basically becomes a fiscal, kind of zero sum game between nations who can kind of out stimulate their consumers more, which I think for a lot of the global south in particular, you see typically much heavier government subsidies of petrol prices, diesel prices, LPG prices, et cetera.

[01:04:17] If that's allowed to continue in this situation, this is not just a consumer kind of recessionary depression crisis. This is also a government fiscal crisis

because the government at this current stage is naturally going to try and shoulder a lot of that pricing pain itself,

[01:04:31] **Nate Hagens:** which leads to, treasury funding crisis and credit crisis and currency crisis, and.

[01:04:39] The Great Simplification in my opinion. Yeah. Which is why this is, this is such a watershed moment for our culture.

[01:04:45] **Rory Johnston:** Yeah.

[01:04:46] **Nate Hagens:** And to be honest, I'm, no expert. but you mentioned the ability of Iran and all their underground, their, stored missiles and such. Personally, I think that's what this is all about, is to eliminate that threat and this enriched uranium is, kind of a, a red herring.

[01:05:06] I think that this is to control the spice and if KSA and Israel and the US and some combination have control over this region, that's one thing. If it's every man, every country in the Middle East for itself, that's chaos on the global market. So there, I mean the global economy. Yeah. I just. It's refreshing and also frustrating, for me to talk with someone, as erudite and scholarly and a barrel math savvy as you.

[01:05:44] The frustrating is the average financial pundit doesn't see the second and third order effects of this. Either that or there's some other tailwind that it doesn't matter what happens here, that AI is gonna change all our lives and, be massive productivity. And it doesn't matter what happens, but you and I both know that we need molecules and materials underpinning all the AI and, everything.

[01:06:13] So, this is a, just a bizarre moment in, in history because I've been studying this and the risks and net energy and, the relationship between energy and technology and energy and money and energy and the environment for over 20 years, and it's just like, oh my God, look what's happening.

[01:06:31] **Rory Johnston:** No, it's truly, crazy.

[01:06:33] And again, I, can't believe that we're two months into a closure, and I can't believe that despite two months into a closure, oh, we, the oil prices are taking higher again through our conversation. So they're up around $105 a barrels a day, on Brent. So, slightly, more concerned, relative to, you know, the hour ago that we started talking, but still not, nearly conservative.

[01:06:52] But before we go on, I do wanna just quickly touch on what I think, what my base case is, because I think that Yes,

[01:06:56] **Nate Hagens:** please do.

[01:06:57] **Rory Johnston:** I think that it's, my view from the beginning of this has been that there are three participants primarily in this war, United States, Iran, and Israel.

[01:07:07] **Nate Hagens:** Yep.

[01:07:08] **Rory Johnston:** Of those three participants, only one the United States, and really just one person, Trump himself is influenceable by external market pressure, Israel's not gonna budge because what of the s and p is doing?

[01:07:20] Correct. Correct. Iran's not gonna budge. It's only Trump.

[01:07:23] **Nate Hagens:** Yeah.

[01:07:23] **Rory Johnston:** So I think that the way I see this ending, my base case is that Iran, at this stage. Has no real incentive to bow out. Now it the long, right. Now, for instance, in a ceasefire, let's say the ceasefire is working perfectly. It's not. But let's say it's in that situation, Iran continues to build leverage.

[01:07:42] The longer the strait's closed, 'cause we're losing that 13 million barrels every day, it remains closed. If in a world you were to say, Iran, how about you keep building that leverage, but we stop bombing you? They're like, wow, that sounds fantastic. I love that plan. So now for this full month, we're basically gonna be a situation where Ron is not being bombed, but continues to build leverage.

[01:08:04] **Nate Hagens:** But why would they trust us?

[01:08:06] **Rory Johnston:** Well, I think this is the thing, right? I think they, frankly, they don't trust, the United States in particular. I mean, I mean Trump bombed them two or three times Yeah. Through active negotiations. Exactly. So that's not exactly good goodwill building. But I do think that they also do not want this to last forever.

[01:08:22] they also have an interest in like a. Making money again. Self preservation. Yeah, and continuing. So I think that they will eventually reopen the Strai, but under some kind of go forward IRGC control, whatever that may look like. But I think importantly, they are not going to reopen the RAI or I think it's very unlikely, and this is naturally when they're gonna agree to something between this being filmed and us releasing.

[01:08:46] but I do not believe that they will, readily agree to the current proposals from the White House to reopen the strait. That would still require, for instance, them to give up the highly uranium or domestic enrichment or missiles or whatever else. I think that Trump is going to have to make some painful concessions to Tehran to get the straight reopened.

[01:09:07] But I don't think that Trump is going to do that until the market presses him to do this. So this, we go into this paradox of, right now the market sells off every Trump. Every time Trump says it's almost over, we're about to leave. But then that removes the pressure on him to do so. So now we just keep chasing our tails.

[01:09:23] **Nate Hagens:** Do other countries have any, influence, like Europe leaders calling Trump and say, dude or Xi Jinping? I mean, I, China has a huge petroleum reserve, but they're also a big energy. oil importer and over time, this is gonna crimp all their industrial capacity, et cetera. Do does the international community have influence On my president?

[01:09:53] **Rory Johnston:** I would say yes and no. yes. Let's, I start with no, first. I do not think that Trump is a particularly multilateral president. I think that's just a charitable way of putting the kind of unilateralism we've seen outta the White House thus far, particularly in a second term. but. What we have seen, is it his address to Congress?

[01:10:15] I can't remember how long ago that was a couple weeks ago. And he basically said, more or less, we don't get oil from the strait countries that get oil from the Strai in Europe and Asia. Figure this out yourselves. That was increasingly my base case view of this unilateral taco and him basically leaving kind of the bag of crap for everyone else to kind of clean up on the other side.

[01:10:35] But I will say that Aris said that very clearly, oil companies, Asian allies, basically jumped down his throat and you have, to his credit, you have seen him back off that figured out yourself framing and that, I think now this is how we got to the blockade. Which is before it was like, we're just gonna let this figure itself out and we're gonna leave.

[01:10:58] But now they're like, no, we actually really need to reopen this straight. And they're like, okay, how do we do that? Let's blockade it so that Iran feels more pressure, which is kind of working, but not really.

[01:11:06] **Nate Hagens:** We just met, so you don't know. all my, views and, logic and stuff, I'm pretty apolitical.

[01:11:14] and, I care deeply about the environment, and other species. But I'm a systems thinker and I look at how all this fits together. I learned the hard way in the Ukraine Russia situation, that there's two wars, there's the kinetic war, and then there's the propaganda war. And a lot of people had really, divorced, stories from what was really happening.

[01:11:37] And I think that may be happening again, but I think however this ends, unless it's the fingers crossed, smarter heads prevail, in the next week. There is a bifurcation now in international trust. And cooperation and letters of credit and long-term contracts, and they're gonna pile up between commodities and energy.

[01:12:02] And I think that is the geopolitical. Second, third order effects of this are something that no one is really long-term prognosticating, because I think it's very difficult. But, something big just happened. what are your thoughts on that?

[01:12:19] **Rory Johnston:** I agree and I think to, refer to our, national leaders.

[01:12:23] again, I'm in, Canada, so there was a, Mark Carney speech to Davos about this same thing. Basically there's been a rupture in the global international system that used to at least pretend to work one way on a certain set of kind of transparent rules-based global government, global governance, that has entirely fallen away.

[01:12:47] I think one of the weird things about this. Is obviously the United States and the President is at the center of that. I mean, it has been definitively the center of that post, post-war kind of global international system defined by open, seas, free trade, all these things that the US political system has prioritized kind of as a it's bedrock, central tenants on both sides of the aisle for decades and decades.

[01:13:14] And now we have all of a sudden a president who not just doesn't care, but actively hates many of those tenants of global governance. but this is not, and I think as you are now clearly indicating being an American yourself, these are not commonly, these are not universally held hatred of the prior system of whatever else.

[01:13:35] So I think one of the things that's gonna be confusing for the global system over the next decade or two. Is that we, it's a decent, my expectation is that the United States and Washington is gonna be very, hot and cold back and forth between election cycles.

[01:13:49] **Nate Hagens:** Let, me ask you a personal question, Rory.

[01:13:51] So my, we just met recently, but you've been on our guest list for, quite a while. My staff has, had their eye on you.

[01:14:00] **Rory Johnston:** Ooh.

[01:14:01] **Nate Hagens:** during your professional career, I understand you've also analyzed a variety of other commodities beyond oil. Yeah. I'm just curious why you decided to switch to predominantly focus on oil and how you currently situate oil in relation to all the other commodities.

[01:14:18] **Rory Johnston:** Yeah, so the, so prior to this, I led commodity economics research at Scotiabank here in Toronto, where I covered roughly two dozen commodities between oil and gas base metals like copper and nickel Ferris metals, like steel, agriculture, paper products, kinda everything under the sun. the reason I decided to go with oil as first oil was always my kind of first love of the commodity space.

[01:14:41] It's what brought me to the commodity space. I, like any other young oil wannabe with oil ounce spread. Dan Jurgen's the prize back when I was an undergrad. I'm like, wow. Winston Churchill switching over the Royal Navy from Welsh Cole to Persian oil. Oh, this is so interesting. And I got really hooked on this side of it.

[01:14:58] So a bit of it was a prior, but I think very frankly, one oil dwarfs in terms of market size. Every other commodity market in total. Easily. oil is just that big a market in terms of market size and from my own view, it's got the best data. And I think this is because of the 1970s and 'cause of the IEA and all these agencies that came out of it.

[01:15:22] You know, metals, data mining data is tragically terrible. I like base metals are really interesting. They're gonna be, you know, obviously monumentally important, copper in particular for global energy transition, but the data's really bad. yeah. And that is frustrating, particularly as someone that wants to like, have charts that I can comment on.

[01:15:42] A lot of copper stuff like is like annual and it's like, well. This is not really a business outer in the same way.

[01:15:48] **Nate Hagens:** I mean, well, the other reason is oil is the master resource. as Jurgen would've said. were would still say, and I say, well, other than oxygen and water, but, that's free most, in most places most of

[01:16:00] **Rory Johnston:** the time.

[01:16:02] **Nate Hagens:** so, but most of the world, and this conversation has been focused on the direct effects of the amount of oil available for purchase. But, complexity is, one of the, I call it one of the four horsemen of the 2020s. If we look at layer deeper, there are all sorts of other production cascades at risk here due to the closure already to this point, let alone a further, constriction.

[01:16:27] Are there any hidden supply chain risks from the conflict that you are, specifically keeping an eye on?

[01:16:33] **Rory Johnston:** And I think the two ones that are below the oil and gas surface that everyone's talking about is fertilizer supply and helium. now, in both of those cases, both of those are generally derivative.

[01:16:45] Derivatives of the gas sector in particular. so I think if this persists, and I think even if it doesn't persist, we're going to see a diversification of that production elsewhere, for instance, to places like North America that have lots of cheap, functionally captive natural gas in the system. But I think that is one thing that we could expect to come out of this.

[01:17:04] The other thing I should note, and this is something we hadn't mentioned yet another, I had mentioned kind of the guaranteed energy security policy changes in Asia, more sps, you know, more transition, et cetera in the Gulf. This is in some ways the, countries that have been most existentially threatened by this crisis are the Gulf economies themselves, where you've, you're gonna see double digit GDP contractions, you know, these are their largest industries by far, that have essentially just been turned off.

[01:17:30] Every one of those countries is going to follow Saudi Arabia's lead and build pipelines that divert around. the straight of horror news. So this is, if you

think about Iran, this is a, wasting strategic asset for Iran. That the longer they use it, the more they use it, the weaker it's going to become.

[01:17:47] 'cause it incentivizes diversification and kinda rerouting around it.

[01:17:50] **Nate Hagens:** That's a good point. In

[01:17:51] **Rory Johnston:** the same way actually, you know, very relevantly of US economic warfare as well, the do, the weaponization of the dollar and the international trading system is itself a wasting asset because the more you use it against Russia and Iran and you know, it's like China.

[01:18:06] Yeah. You know, the more you divers, the more you force diversification away from that system,

[01:18:10] **Nate Hagens:** away from Swift and, all that. Yeah,

[01:18:12] **Rory Johnston:** exactly. So I think that in some ways, I think the ma the thing this is going to do is this is going to put everyone on notice. That, you know, like economically, it's never gonna make sense to build pipelines to the Red Sea or the med from these countries versus using the Gulf because even with a disruption, you know, we're talk, you're talking about like massively expensive.

[01:18:32] You know, even if Iran charged $2 million toll, which is what it's been discussing at one point, that's only a dollar a barrel for A-V-L-C-C tanker. That's like pocket change in the global economy. And if we were, if oil was only up a dollar, I would not be talking to you right now. Right? That's like, that's not what we're talking about.

[01:18:49] But, and you're never gonna build a pipeline for less than a dollar a flowing barrel that's just, pipelines are way more expensive. But fundamentally it's comes down to self-determination and kind of security for these countries.

[01:19:00] **Nate Hagens:** I want to be, respectful of your time, but I do have some closing questions that I ask all my guests.

[01:19:07] but before I ask that, how does understanding all this, or does understanding all this affect the way that you use and think about energy in your own life? And do you have any recommendations for our viewers on how they might pivot their lifestyle or decisions or consumptions ahead of the, coming months?

[01:19:28] **Rory Johnston:** It's interesting. I think, you know, I always. Joke that I, we, recently had our third child a couple years ago, and we were, we need to upgrade the family car to something slightly bigger. And we switched from a diesel station wagon to a gasoline SUV. And I always joke that it was the best physical commodity trade I ever made.

[01:19:45] 'cause I, we traded in at the end of 2021. And ever since then, diesel margins have been like, double what we've seen in gasoline. So the whole world, I would say right now, diesel and jet fuel, these middle distillates are continually the most expensive scarcest molecule within the barrel.

[01:20:02] **Nate Hagens:** Yeah. So diesel right now is like 200 or no, jet fuel is like $210 a barrel.

[01:20:08] **Rory Johnston:** Yeah.

[01:20:08] **Nate Hagens:** And oil's only a hundred.

[01:20:09] **Rory Johnston:** Yeah. So you, so when we talk about a crack spread, and we haven't even really talked about refined products, the crack spread is essentially a, simple refining margin. 'cause obviously, basically a crack spread is

the difference between, let's say the price of jet fuel and the price of a barrel of oil that would be used to make it.

[01:20:25] But as we've been discussing, you can. Turn a barrel of oil into a barrel of jet fuel. It has to be fractionated across a whole number of like, you know, a dozen plus different, primary, products. so I think that's the other aspect is that, you know, your, refining margin, your profitability at the end of the day is a weighted average blend of all of those crack spreads.

[01:20:47] But right now. Middle distillates diesel gas oil, which is more commonly used in Europe and Asia, and jet fuel, are your kind of richest products in that right now with gasoline kind of tailing behind. So if you have a capacity to shift towards away from the middle, distillates in your lives, I think that is a good long-term hedge

[01:21:08] **Nate Hagens:** or shift away from all distillates

[01:21:11] **Rory Johnston:** or switch away from all distillates also an option.

[01:21:13] **Nate Hagens:** So do you, you mentioned that you have kids, we have some young viewers, in their late teens and twenties. do you have specific recommendations for young humans who become aware of our economic energy, environmental constraints, that are present in the global economy?

[01:21:32] **Rory Johnston:** So I've got two.

[01:21:33] so the first, I will say specifically to energy, and I think I, a lot of my success to date has been due to the fact that there has not, I have not had that much competition. People in my graduating class out of grad school were not champing at the bit to talk about oil. They were looking at ESG, they were looking at electrification.

[01:21:52] They're looking at all the things, all these things the future is predicated on. But that left a big gulf. For traditional still dominant energy systems. So I would say that if you are interested in the future of energy transition, spend as much time understanding legacy energy systems because they are the fulcrum around which everything else is gonna bend.

[01:22:10] So I think understanding what we mean by barrels and BTUs and everything else, heat units, I think this is important to base understand the way the global system is going to work.

[01:22:21] **Nate Hagens:** Yeah. I happen to fully agree with that because a lot of the younger people just say, oh, fossil fuels have emissions so bad.

[01:22:28] Yes, that's true, but look at all the benefits that we take for granted and are starting to be shown to our face, in, current and coming months. So I agree with that

[01:22:38] **Rory Johnston:** a hundred percent. And I think the other thing I'll say is I think slightly less about energy and more about life. I also teach a course at the University of Toronto's Monk School of Global Affairs, where I am a, I'm an alumni myself, and I always give my students kind of this piece of advice, which is they're all talking about like future careers and everything.

[01:22:54] Like what should I do? They're always thinking about firms and titles. They're thinking about X Bank and being a analyst or managing director or a trader or whatever. '

[01:23:06] **Nate Hagens:** cause they care about status.

[01:23:08] **Rory Johnston:** Yes. And I think, and status and income, which I think makes sense as a young person, particularly going into a life where you're like, I

just wanna be able to afford an apartment, or God forbid a house in these markets, particularly in Toronto.

[01:23:20] so I understand that. But the, thing I always stress is like, don't, people are like, what should I do? Like, don't ask where you wanna work or what you want to do per se. Like what job, what do you want your day to day grind to look like? Do you want to be writing? Do you wanna be reading? Do you wanna be on podcasts?

[01:23:35] Do you wanna be talking to media? Do you wanna be. Doing emails and making decisions to allocate capital. Like it's that daily grind that is going to define your life, not your title. And I think that it's really, important to just remember, like, what do you actually enjoy doing? I really like reading, researching, writing my thoughts and talking to people about it.

[01:23:54] I have my dream job right now. I want other people to kind of think in the same way.

[01:23:59] **Nate Hagens:** That's well said. Thank you. of course, I've, changed that daily routine like three or four times, but th this, job feels unnatural to me. so I resonate with what you said, here a couple, especially since you don't know these are coming, these might be awkward questions.

[01:24:19] What do you care most about in the world, Rory?

[01:24:21] **Rory Johnston:** What do I care most about the world? I, think my, my, my family. I, outside of family and outside of like my immediate loved ones, I think I, care about kindness. I think that, I think the thing I dislike most about the shift in our politics. Has been the kind of loss of that basic civility.

[01:24:39] No matter what policy position you're recommending or advocating for, just be nicer to each other. I think we're all kind of trying to deal with this, and I just think kindness is deeply underrated in our global system.

[01:24:51] **Nate Hagens:** Now I know why my staff had you on the list. if you could wave a magic wand and there was no personal recourse to your decision, what is one thing you would do to improve the future?

[01:25:04] **Rory Johnston:** Ooh. Remove all emissions from fossil fuels.

[01:25:10] **Nate Hagens:** Okay. That's a magic wand.

[01:25:12] **Rory Johnston:** That's a magic you gave me magic if we could just have oil, gas, and coal without emissions or downsides. That sounds fantastic.

[01:25:21] **Nate Hagens:** this has been very informative and, you're, a, great guest and I, know you're working, on a substack and you have your oil, newsletter.

[01:25:33] What's the name of the newsletter?

[01:25:35] **Rory Johnston:** So the newsletter and my main business is called Commodity Context, so you can find that commodity context.com. It's on Substack. And then I also host the Oil Ground Up podcast where I talk about all this wonky stuff with other oil and gas analysts, all oil all the day.

[01:25:49] **Nate Hagens:** I'm hoping in the same way that your purchase of your car, with respect to diesel wasn't a Costanza sort of move, and that we have jinxed the cease fire, in the next week that this comes out. But fingers crossed for a good outcome. And, thank you for your time today and for your work to be continued.

[01:26:07] Rory,

[01:26:07] **Rory Johnston:** thank you so much for having me. Nate.

[01:26:09] **Nate Hagens:** If you'd like to learn more about this episode, please visit The Great Simplification dot com for references and show notes. From there, you can also join our Hilo community and subscribe to our Substack newsletter. This show is hosted by me, Nate Hagens, edited by no Troublemakers Media.

[01:26:28] And produced by Misty Stinnett and Lizzie Ani. Our production team also includes Leslie Balut, Brady Hyen, Julia Maxwell, Gabriela Slayman, and Grace Brumfield. Thank you for listening, and we'll see you on the next episode.

[01:26:45] I.