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Exploring the Future of Energy with Daniel Yergin

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00:00:00 KEN STUZIN: Hello, this is Ken Stuzin. I'm a partner at Brown Advisory. Welcome to the NOW Podcast. NOW stands for Navigating Our World. Through these discussions, we try to better understand the world, to navigate some of the most pressing questions that are shaping our lives, our culture and our investment challenges. As we look to the future, whether we agree or disagree with each other, the one thing we know for sure is that none of us can figure this out on our own. At Brown Advisory we are focused on raising the future, and we hope these NOW conversations will help us do just that.

00:00:47 JANE KORHONEN: The coronavirus pandemic may be a once-a-century event that is crashing into what many consider the ongoing challenge of our time -- climate change. This collision is fueling a slump in energy demand that is unparalleled since the Great Depression. At the same time, a combination of new technologies, consumer behavior and policy decisions are contributing to a surge in renewable energy. As the backdrop to this singular year in our lives and in energy markets, we recognize that the global economy is migrating to lower carbon energy sources. Yet, across the world, we still generate more than 80% of our energy from fossil fuels: oil, gas and coal. As an investor, I'm constantly setting these trends to understand what they're telling me about how to make better investment decisions for our clients.

I'm Jane Korhonen, and I'm a partner at Brown Advisory. When I want to understand what's going on with the global energy landscape, I turn to one of the world's foremost thinkers on energy and its relationship to international politics and economics, Dr. Dan Yergin. Dan is vice chair of IHS Markit, one of the world's largest research and information companies, and creator of CERAWeek, the leading gathering of energy CEOs and policymakers from around the world. Dan is the author of numerous books, including The Prize: The Epic Quest for Oil, Money, and Power, for which he won a Pulitzer Prize. And he just published a fascinating new book, The New Map: Energy, Climate, and the Clash of Nations. In this time of global crisis, I wanted to sit down with Dan to understand what he's thinking about and where he thinks we are going. Thanks so much for joining us, Dan.

00:02:42 DAN YERGIN: Thank you, Jane.

00:02:44 JANE KORHONEN: Top of mind, the entire world is being reshaped by the coronavirus. Just a little bit of context to the extent that Salesforce, this is a framework, just bought Slack for

$28 billion because their CEO thinks that remote work is here to stay. So, energy as an industry has not been immune from the same kind of forces at play. Can you just give us some thoughts on what's next? Which COVID-induced changes are temporary, and which ones do you think are here to stay?

00:03:17 DAN YERGIN: It seems pretty clear that maybe eight years of digitalization have been compressed into eight months, that people have learned to work differently, to work remotely. Every CEO I know of is struggling with the question of return to work and how do you return to work? How many people? How many days a week do you do it? I think business travel will be challenged in this because you can be on three continents all in one day without actually going to an airport.

00:03:48 JANE KORHONEN: The demand destruction that came in that acute moment in March and April, can you just speak to that as foreshadowing some discussion we'll have later on the current landscape for energy?

00:04:02 DAN YERGIN: What happened last April was actually no precedent. Certainly, there have been cycles. The oil and gas business goes through cycles. This was not anything like a normal cycle. This was a shutdown of economies in a way that hadn't occurred. And I think the global oil industry, like other industries, simply was not prepared to see demand in one month go down by almost 30%, and that's what happened. I think when we get to, you know, the end of the year, it'll turn out that demand will be down for the year about 10%. That was a shock last spring, like one the energy industry had never experienced before.

00:04:42 JANE KORHONEN: Made worse, possibly, by Russia and Saudi Arabia in the midst of all of that deciding to walk away from the table, at least from a supply standpoint?

00:04:52 DAN YERGIN: Yes, you had a price war that could not have been more ill-timed. And I think it's because they were looking at what happened in Asia, where you had demand go down 8 million barrels a day and didn't see what was actually going to come, which was a much bigger decline in demand that came when North America and Europe shut down. And it was really U.S senators and then the Trump administration that's really put the pressure on them to come back to the table. Trump apparently worked the telephones and worked out a deal that people thought would be impossible for huge, coordinated cutbacks. Otherwise, the alternative was falling deeper into the abyss.

00:05:37 JANE KORHONEN: You mentioned the Trump administration. All eyes today are on the incoming Biden administration. So, where we sit today is lots of questions, lots of maybe even trial balloons on evolving or prospective energy policy. Can you help us sort through both priorities and sequence that you'd expect to come from that administration?

00:06:00 DAN YERGIN: So, the focus of the Biden administration -- it said that one of its four priorities will be climate.

00:06:08 JOE BIDEN: Global warming is an existential threat to humanity.
00:06:10 DAN YERGIN: Then that will be part of the agenda of every cabinet secretary.

00:06:14 JOE BIDEN: We have a moral obligation to deal…

00:06:17 DAN YERGIN: How extensive it will be really depends on the fact that actually the presidential election is not over, and it won't be over until January 5, when the outcome of the Georgia election becomes known, because that will determine where the pressures will come from for the Biden administration. Will it be pushed to the center to work with Republicans, or will the pressure come from the left or the Democratic Party? Climate is going to be top of the agenda. We're going to hear a lot about it, and one of the very first things that Joe Biden is going to do is seek to reengage with the Paris Climate Agreement.

00:06:55 JANE KORHONEN: Let's build on that, because you have said that you can divide the energy landscape into before Paris and after Paris. How will the impact of the U.S. reentering the Paris Climate Agreement alter what that looks like as well?

00:07:12 DAN YERGIN: Well, I called my book The New Map because I said that really, the terrain has changed. It's changed from what it was a decade ago in terms of shale, to electric cars, in terms of the cost of solar, in geopolitical relations, which we can come to. And it's changed in terms of the Paris Climate Conference and that agreement. And that's why I say before Paris, it was one deal, and after Paris, it's another. You have 195 nations that signed onto it. Really quite extraordinary to have this kind of consensus, and it's congealed around this notion of keeping temperatures two degrees or one-and-a-half degrees centigrade above preindustrial times. And that is translated into these net zero carbon targets that have now become prevalent at national and corporate levels as well. And to have the U.S. back in the game, to have John Kerry, former secretary of state, as the climate envoy, it's all going to be about collaboration, working with other countries, international consensus.

00:08:13 JANE KORHONEN: I want to get to some of those geopolitical tensions that you've already referred to, but can we just stay with this particular topic here as it relates to our thinking about pace and direction? So, if it's true that energy transitions have been energy evolutions, not revolutions, as what you're describing, could this time be different?

00:08:36 DAN YERGIN: In The New Map, I've said that the energy transition began in January of 1709, when a British metalworker found out that you could use coal instead of wood and make better iron as a result of that. But these energy transitions occurred over centuries and, as you said, they were energy additions. That coal –- the oil overtook coal in the 1960s, and coal consumption is far larger today than it was in the 1960s. I think we're now kind of at a pivot point. I think conventional energy demand will continue to increase. But what is different is you have the full force of governments, committees and resources using regulation, stepping in to allocate capital that is going to try and push things faster and use incentives, penalties to try and move. But it is to take an $87 trillion economy that depends on oil, gas and coal for 80% of its energy as it was last year and kind of pivot. It's going to be a very big challenge, and probably the technologies you need are actually not there.

00:09:54 JANE KORHONEN: Even just maybe the next three to four years, what should we be watching to see if there's real traction here? What would be important to you?

00:10:02 DAN YERGIN: That's a very good question, and part of it will be the nature of economic recovery and what kind of resources governments have. In The New Map, I posit sort of putting it in European terms, a conflict between finance ministers and environment ministers. I think I put at the top, actually, what the nature of GDP recovery is. I think another thing that has not been looked at and is an area that I'm focused on doing research is understanding what are the new supply chains for a net zero carbon, because the scale of which you're talking about again is so large, paying attention to the supply chains, the bottlenecks, how geopolitics impinges on those supply chains? Those will be important.

I would watch the sales rate for electric cars and how much consumers adopt them and how quickly they adopt them. You know, I guess it's keeping in mind scale. If every car in the world today was an electric car and it got its electricity from wind and solar, you'd reduce carbon dioxide emissions by about 6%. You've got to look where the gains are. And I would look for progress on batteries. I would look for progress on carbon capture. I'd look to see what's happening with hydrogen. And I think going back to your first question, it will be the impact of digitalization. What happens to commuting? What happens to travel?

00:11:29 JANE KORHONEN: Another dimension of that is the agreement is supposed to imply global cooperation. Inevitably, there'll be an even adoption and progress by geography. I was impressed by some of the anecdotes that you provided on progress in China, who's been a, let's say, somewhat of a dirty player over time and its still-heavy reliance on coal. Some, just thoughts and observations on geographies.

00:12:00 DAN YERGIN: The U.S. produces about 15% of world CO2 emissions, human-based. China about 30%, 29%. China is the biggest energy consumer in the world. So, I think the statement of Xi Jinping at the UN, where he's committed China to net zero carbon by 2060, that's a big deal. People are taking it very seriously over the next five-year plan. And China has already carved out a kind of leadership program in what they call new energies; 70% of the solar panels in the world come from China now. But it's still a very big thing to do. And, of course, for China, it's not only about climate. It's a very literal thing about the urban pollution that they need to address and have to address, and the Chinese middle class is really demanding that it be addressed. So, they have an additional reason for doing that.

But I think you can contrast that, Jane, with other parts of the world, where we did a virtual India Energy Forum with Prime Minister Modi, and we had about four of his cabinet members, including the minister of finance. India is saying, "We are going to go all out on wind and solar, but you know what? We have a lot of poor people. And echoing the World Health Organization, which says that indoor air pollution from cooking with wood and waste products is the number one environmental problem in the world and it affects maybe 40% of the world population." They say, "We also need more commercial energy. We need natural gas." So, India has a big commitment, a $60 billion commitment to building out a natural gas infrastructure system. So, there are different approaches.

I have a quote in The New Map from the energy minister of Nigeria saying, "It's great what the Netherlands and Germany wants to do for Netherlands and Germany, but we're not them. We have tens and tens and tens of millions of poor people, and we need to get natural gas to them."

00:13:53 JANE KORHONEN: Okay, you mentioned China. You are on record saying that we are entering -- or not entering, but we're already in -- a Cold War between the U.S., China and Russia.

00:14:04 DAN YERGIN: We're on a track, and every week it seems new things happen that move us in that direction, that break the links. It's the end of a WTO consensus, as I call it, of where the notion of China would be integrated into the global system. Now, it's like, is this going to be one world with two separate economic systems? But it's not the Cold War, obviously, of the Soviet Union and America because then the Soviet Union was not a player in the world economy. China's a really big player, and we're codependent with China. They own the largest share of our foreign debt in the United States. And we're both embedded in the world economy. We keep hearing from other countries the same message is, "Don't make us choose."

00:14:49 I did a public dialogue with the president of Colombia, and he said, "You know, we have a basic strategic relationship. The most important relationship is with the United States. But China is our most important market." What do we do when people, other countries that are not getting much attention but are struggling with the question of not getting caught up in this? So, I think there's a risk that we're sliding into that. If it is, it's a lot more complicated than it was in the Cold War because of that economic integration. General Motors sells more cars in China than it does in the United States.

00:15:21 JANE KORHONEN: What are you thinking about Russia and its role and its leader?

00:15:27 DAN YERGIN: Think of how it looks from Vladimir Putin's point of view. While he's been president of Russia, he will have seen five U.S. presidents come and go. You know, it's a different way of looking at the world. He had said that Russia is not an energy superpower, but, in fact, a lot of its power does come from its energy position. It's very tied up with its geopolitical issue, whether it's the battle over that Nord Stream, 2 pipeline that would take Russian gas under the Baltic Sea to Germany, which the U.S. has sanctioned on the grounds that it's a threat to U.S. national security, which the Europeans scratch their heads over. Or the scene I described in the book, of Putin and Xi together inaugurating the power of the Siberia natural gas pipeline all within weeks of U.S. sanctions. And the power of Siberia's pipeline demonstrates the power of this Russian-Chinese relationship, which has become a very important geopolitical reality in the world.

00:16:29 It's amazing how well Putin has played his hand, because the Russian economy is somewhat smaller than that of Italy, somewhat larger than that of Spain. But he has projected Russia back as a great power and a player.

00:16:40 JANE KORHONEN: I'm pivoting back to China just for one moment because I know a lot of our listeners might be interested in your view on the potential tensions between the U.S., China and Russia. But the South China Sea, the role of the South China Sea. Headlines frequently that probably should address that.

00:16:58 DAN YERGIN: I think it seems, obviously, far away to a lot of people. But the South China Sea is the most important body of water in the world economy. One-third of world trade passes through it. But it's also, I think, becoming the most dangerous body of water in the world. China has this nine-dash line, which I sketch it out in the book showing it, and it basically shows China claiming 90% of the South China Sea as Chinese territory. And as a Chinese geographer recently said, it's engraved in the hearts of the Chinese people. Well, nobody else accepts that, and U.S. and Chinese warships have come close to colliding with each other. China shows no sign of wanting to back off. Indeed, it is dredged in reclaimed 3,200 acres of land. It's turned these little islands, islets, into stationary aircraft carriers. And I think, you know, if you just say, "Where's a risky spot where something could happen?" That's it. You know, I think the best that can be hoped for is strategic ambiguity.

00:18:07 JANE KORHONEN: Any other hot spots that we need to be thinking about given your wide network?

00:18:13 DAN YERGIN: You know, one always thinks about the Middle East and Iran. One policy under Obama, another policy under Trump and presumably another policy back toward Obama under Biden. But there is a regional competition in the Middle East between Saudi Arabia, Iran and Turkey, which people aren't thinking so much about. Or predominance in the Middle East. You know, if we talk about a new map, the UAE, the United Arab Emirates, making a peace treaty with Israel is very significant. It is a new map, and I think it's partly recognizing that the U.S., now that it's energy independent, may be less engaged with the Middle East. And so, why not allies between regional Israel as a regional superpower? You can put it that way. They both agree that the biggest problem they face is Iran. And so, that continues to be very volatile and simmering.

00:19:10 JANE KORHONEN: With implications for energy consumption or certainly supply and pricing.

00:19:17 DAN YERGIN: Yeah, right. But, Jane, that's a very good point, because we had last year in September, Iranian drones attacked a thing called Abqaiq, which is the most important hardware in the world oil industry.

00:19:32 NEWSCASTER: Nearly a week after the worst terror attack Saudi Aramco has ever seen, as assessment of the damage. Multiple strikes taking out half of Saudi's production, with 5.7 million barrels per day offline in a matter of minutes.

00:19:47 DAN YERGIN: It can process up to 7 million barrels a day. And if that had happened six or seven years ago, there would have been panic in the oil markets. Now, I mean, the Saudis were able to repair it. But the other thing that happened there is, you know, maybe 24 or 48 hours of panic because the growth of the U.S. becoming the world's number one oil producer just has changed the psychology of the market and really meant a degree of energy security that wasn't there before. And right now, most of Iranian oil is sanctioned. It isn't coming to the market, and the world market just goes on without it. And I think that was a real shock for the Iranians to discover that actually, the world didn't need their oil.

00:20:29 JANE KORHONEN: It's fascinating. You know, this is mostly about countries, but then we have the principal operators, the companies that are trying to navigate all these shifting sands or, as you point out, the new maps. So, Exxon made a notable announcement recently

-- not a huge surprise -- but riding down its natural gas assets by around $20 billion, cutting capital expenditures, really kind of focusing or refocusing on some of their higher-returning businesses and projects. How should we be considering Exxon's move in a broader sense? What are the implications for the industry?

00:21:11 DAN YERGIN: The companies are realizing that they need to deliver returns to investors. And the returns have been quite poor over the last several years, and that means being more selective, more focused. The world needs reserves, got to go out and get reserves. And that was kind of psychology. When people talked about peak oil, the world was going to run out of oil a decade ago, but it's not the case anymore. Now there's a sense of a lot of abundance. So, companies are going to be more focused on returns. I think they're going to be more selective in what they do, seeking to have strong balance sheets. And so, I think they're going to be managed differently. I think it means countries are going to find it's not a sellers' market. And I hear this. I've had discussions in the last few weeks with a couple of different countries. They're going to have to win investors' confidence. Exxon is doing what the other major companies are doing, kind of preparing for a more demanding time.

00:22:07 JANE KORHONEN: But your earlier point, be careful about making generalizations. BP and Royal Dutch seem to be out front and shifting to renewables. Are other companies reinventing themselves, not just focusing on existing businesses, but actually –- maybe actually moving in different directions?

00:22:30 DAN YERGIN: Oh, absolutely. You can see the other European companies, Repsol, Equinor, they're all redefining themselves as energy companies. They're responding to investors. They're responding to the political situations in the countries in which they work. I think there is a difference in perspective between the Europeans and the U.S., which is interesting to me to see all of them –- a renewed focus on technology. In fact, a focus that maybe was never there before to the degree that it's there now. And, you know, at the end of the day, oil companies are engineering and technology companies, and they're run by engineers and technologists. But I think there's a sense, you know, they're active in venture capital in terms of their own research. But it takes time.

The first lithium-ion battery car of Tesla appeared on the market in 2008, I believe it was. The lithium-ion battery was originally invented in an Exxon laboratory in 1976, when it was thought the world was going to run out of oil. So, it takes time to take things from concept and discovery to commercial development. A big rush now to look at hydrogen. How does that fit into the energy mix? You see the signs out there that internal combustion engine cars won't be sold after some date in California, some date in Europe or England. You've got to make sure you have the materials to make these other cars and consumers want them. But also, it is important to note that cars use only about 20% of oil, and all the other things that oil is used for, for instance, making new bodies of electric vehicles. Plastics go into wind turbines and, you know, all the PPE that people need to stay healthy working the hospitals is a petroleum product. Some of the medicines are a petroleum product.

So, there are a lot of other products. And, you know, right now, that debate is when does oil demand peak? And I think that's something that, you know, people didn't really seriously think about before, but now it's a subject of debate, whether it's in the 2020s, the 2030s or the 2050s. Companies are adjusting to a shifting world.

00:24:50 JANE KORHONEN: Well, Dan, my colleagues at Brown would be very disappointed if I didn't ask you what your prediction for oil and gas prices are over the next few years.

00:24:59 DAN YERGIN: So, having once written a study called "The Peril of the Prophecy" about what goes wrong with oil price forecasts, I would always begin by saying, "Well, tell me what's going to happen to GDP. Or tell me what's going to happen to geopolitics." With that said, I think the oil prices have been stuck in what I call the virus alley, where demand has come back, but in the United States, gasoline demand is about 15, 17% lower than it was this time last year. It's just been stuck there. So, now it's a tension between vaccine optimism and virus pessimism.

With that said, I think we see signs already that, you know, looking beyond what's going to be a terrible, very difficult 12 weeks for the United States and other parts of the world with the virus to the deployment of the vaccine. And that's what started to get the oil prices up. So, I think that once we're out of this, it's more likely to be prices in the $50 to $60 range than this $40 to $50 that we've seen. And this will not be helpful, but it's possible that oil prices will also be volatile. But I think that the planning number to kind of think in the $50 to $60 range.

00:26:09 JANE KORHONEN: At the close of your book, you rested on the theme of disruption: some of it transformative, some of it sending back on the course of progress. And all of us would love to hear from you, ultimately your view of the future. Are you hopeful?

00:26:29 DAN YERGIN: I'm an optimistic person by nature, but I try and be realistic. And, you know, as a student of history, you know how things can really go off track. You know, you have to be realistic. The financial crisis, 2008. This virus. But there have been positive things too, which is incredible entrepreneurial, innovative culture of the United States and the kind of vitality we see, you know, innovation. You know, it's just so striking when you compare it to other countries. But I think the two overriding things to think about in the future –- and I don't mean this in a pessimistic way, just being realistic. This climate is going to continue to be a profound issue. And, you know, you have to be concerned about the clash of nations. I do worry about a fragmentation of globalization and borders going up and protectionism, which would mean a world economy not working as well as it could. But I think that kind of sets an agenda too for all of us to, you know, do our parts to try and keep things going in the right direction.

But I think if you think about the world and how it's been changed by technology and the amazing things that happen, it has to make you optimistic -- not only optimistic about technology, but optimistic about the human potential that underlies technology.

00:27:56 JANE KORHONEN: Thank you for all of that, Dan. You stay safe, and lots of good insights here.

00:28:03 DAN YERGIN: Well, thank you, Jane. It's really a pleasure to talk to you, to participate in this virtual NOW conference and keeping us all focused on NOW. And so, thanks to you and everyone at Brown Advisory for the chance to join all your listeners.

00:28:20 JANE KORHONEN: I'll be back in a minute to talk about some of the investment takeaways from my conversation with Dan.

I've had a day or two to think about my conversation with Dan Yergin, and I've had all kinds of thoughts about what it might mean for investment decisions that we make for our clients. So, I sat down with one of the smartest investors I know, Brown Advisory's chief investment officer and my good friend, Paul Chew. Paul, before we begin, I just want to give listeners some background. We've known each other and have been navigating investment scenarios in years and cycles together for, what, about 26 years?

00:29:00 PAUL CHEW: Twenty-six years, yeah.
00:29:02 JANE KORHONEN: Been quite a ride.
00:29:04 PAUL CHEW: Sure has.
00:29:07 JANE KORHONEN: Mostly, mostly good, I would say. But if there is a need for a reminder of why we need to be both humble and always on the watch for exogenous events, this year is clearly a good reminder. Let's jump in and see what you thought stood out most from our conversation.

00:29:27 PAUL CHEW: Well, first, Jane, thanks for inviting me to join you in this conversation. I thoroughly enjoyed the opportunity to be a virtual fly on the wall for your conversation with Dan. I can remember some long flights together out to San Francisco to go visit with companies during the raging tech bubble as it was going up and then the ride down the other side. And I think there were a lot of lessons that we learned during that period of time. And one of them kind of jumped out to me during some stuff that Dan was talking about in the conversation. And this idea, you had asked him a question to go through and think about the impact of a Biden administration versus a Trump administration around climate. And I thought it was fascinating to start to put into perspective the idea of what does a world look like if we have a president and an administration that will focus on climate? And we have to think about that from an investment perspective. And you and I have spent many a time talking about how to invest in major long-term themes that are developing. And, you know, we used to call it picks and shovels when we thought about the internet infrastructure. I think the same thing might apply as you think about those businesses, and those investment opportunities are going to change the landscape investing in those opportunities to eliminate CO2 admissions.

00:30:55 JANE KORHONEN: One of those moments where -- in the midst of that conversation -- when he said, "Remember, these energy companies, these large majors, are populated with a lot of engineers and innovative people. And as they reposition themselves, don't miss the forest for the trees," right. These companies are going to pivot. Some of them actually have already started to do that. There's a lot of "energy" being placed on what's next as it relates to climate change and the dollars that are going to be behind that.

00:31:33 One of the things that also occurred to me is that if in fact we are in an up leg in this cycle, cyclically sensitive companies are going to behave better, and those companies that in fact have maybe indirectly an inflation play associated with it is something that we have to be cognizant of. Oil prices have not been a source of structural price inflation for some time. But it is possible, even if it's a cyclical phenomenon, to be aware of it and how we're building portfolios.

00:32:16 PAUL CHEW: Well, expand on that for a second, because I thought that was an interesting thing that you guys hit on. So, you guys talked about the idea -- he brought up the Iranian attack on the Saudi oil field a couple of years ago. And eight years ago, if that had occurred, we would have seen a massive run in energy prices. And today, barely a blip in the radar screen. And, you know, some of that's because of the U.S. shale production and our ability to do that. You know, we always used to think that one of the ways to protect against inflation is to own commodity producers within portfolios. And do we still need to do that as we think through building a portfolio to protect against risks.

00:33:03 JANE KORHONEN: Yeah, we've got to be making sure that we're paying attention to the right data points too, right? So, your point about the U.S. being independent from an energy standpoint makes a huge difference.

00:33:17 PAUL CHEW: That's a fascinating concept that you could actually, by focusing on climate, create a backdrop that's more favorable for traditional energy companies by having energy prices go up as supply is constrained under policies to move us forward on a climate perspective. That's what makes this job so fascinating.

00:33:40 JANE KORHONEN: Yeah, never a dull moment.

00:33:41 PAUL CHEW: You and Dan hit on China quite a bit in the conversation. China produces twice the emissions that the United States does. But, you know, if you end up with two of the major producers of emissions really starting to get on this band, I think it's going to be great. Now, for you and I, it's about how do we sit down and think about that for making money for our clients, which is ultimately what our main goal is? And, you know, I think about, you know, our partners, Karina and David, that run the sustainability equity portfolio, or Amy Hauter and Tom Graff that run the fixed income portfolio. If there's $2 billion being spent in the United States on –-

00:34:27 JANE KORHONEN: Two trillion, my friend.

00:34:29 PAUL CHEW: Two trillion, I'm sorry. These numbers are big. And you think about, you know, $2 trillion, they're going to have some amazing investment opportunities over the long term if there's that. And then you think about the private businesses. You know, what's the greatest thing about the United States in my mind is the innovation that comes, particularly at the private level. You know, there's going to be losers. There's going to be people that, you know, money is not going to be perfectly spent. But with that much capital behind it in the United States, there's going to be some phenomenal opportunities in investing in businesses. You know, for you and I, it's great to have so many colleagues that are so focused on those opportunities.

00:35:14 JANE KORHONEN: I also think or can't you imagine a world where a lot of the majors, as they redeploy capital, that they are in effect funding some of this in an outsourced way? Maybe having learned some lessons along the way in terms of making large acquisitions and deploying capital, in effect, that are jump-starting initiatives through acquisitions that may be happening, but maybe in fact they become the Googles of the world in terms of providing some private funding for that innovation to occur.

00:35:51 PAUL CHEW: Yeah, I think it's a great point. I really enjoyed when you and Dan hit on the idea of the big integrated oil companies. How to think about investing in those? We have a lot of clients that have large legacy positions within a lot of those companies and businesses. And now it's time for management teams to shift their focus. Energy is not the first cyclical business that has faced the reckoning of changing capital deployment, and the sooner energy businesses can start to realize that they need to shift their focus probably makes them more investable and, quite frankly, less susceptible to the cycles that they live in.

00:36:38 JANE KORHONEN: Completely agree. Going back to one of the things that Dan was talking about is when we asked him about the pace of change and the adoption or traction in these climate initiatives. It's like, he did bring it back to global GDP too.

00:36:55 PAUL CHEW: You guys -- you guys talked about the work-from-home stocks and the impact that that had on demand. And he brought it into that GDP construct, talking about, you know, we basically had eight years of digital transformation in eight months. And this brings me back to where you and I spent the early part of our career working together and covering businesses where, you know, we saw the change happening. But how much of it was getting priced in really aggressively really soon? And I think one of the greatest challenges that you and I face trying to advise clients on how to invest their money right now is you've had such a world up until the election that was so dedicated to work-from-home stocks that were truly benefiting from the environment that we're living in today. You cannot take anything away from these businesses. They are doing phenomenally well right now.

The question is, what does the world look like on the other side once the vaccine starts to allow us to get back to normal? And how much demand have you pulled forward that, you know, we've lived through a world where comps start to matter when comparisons are difficult and how things go in there? And some of these businesses are so highly valued. You know, I mentioned Tesla earlier, and I saw a statistic the other day that reminded me of some of the things that you and I used to hear people talk about eyeballs when we were covering internet stocks. That the market cap of Tesla divided by the number of cars that it sells a year is $1.6 million per car. They don't cost that much.

On the flipside, General Motors sits at $38,000 per car that they sell. And how do we start to reconcile that differential and economic value? Tesla might sell a car for twice what General Motors does, but it's not that much –- I mean, it's multiples difference in valuation that is assigned to a Tesla today versus a General Motors.

00:39:12 JANE KORHONEN: See art and science of investing, Paul.

00:39:14 PAUL CHEW: You know, the fun thing for me about the approach that we have taken to sustainability is this idea -- it's about investing in businesses that are better because of what they're doing with sustainability, not because they're doing sustainability. And that makes it to me a much more long-term investment case, where the quality of the business is getting better because of their focus on sustainability and what they're doing. I'm continuing to look for managers, whether it be internal or external, that think the same thought process. Because the idea that's happened, whether it's work from home or, for you and I early in our career, the internet transformational events that happen in economies and can be really powerful investment themes. And sustainability to me is one of those powerful investment themes that's multidecades long. There's going to be winners; there's going to be losers. That's our responsibility to try and look at that and see if we can determine that. We're never going to get those all 100% right. But it's easier to invest when you know you have a very long trend that is in front of us.

And you mentioned the word "global" in that. And I think that it's -- you know, as I mentioned earlier, the idea that both China and the U.S. would be focused on climate and emissions means that that opportunity set, we shouldn't be thinking about it just from what U.S. businesses are taking this, but what ones in emerging markets are able to do this?

00:41:10 JANE KORHONEN: Are we missing anything else?

00:41:13 PAUL CHEW: Well, I do think the China, Russia, U.S. Cold War conversation is an important backdrop for us to think about in investing capital. And it's happening at a time from a political landscape in the last couple of weeks of the Trump administration. We've seen some aggressive moves. Originally, we saw one on trade policy. We've now seen it on restricting access of U.S. investors to invest in Chinese companies related to the military.

There's been a lot of noise about whether they'll be allowed to be listed on the New York Stock Exchange. They have real implications for us as we think about how we invest in what is the second-largest economy in the world. It is too big for us to ignore China as part of the global economy and how we invest assets. And I know you and I have had this conversation the last couple of months, is Asia's done a much -- but is in a much better position right now because they controlled the virus outbreak much better than we did in the West. We're seeing much economic activity over there. That's going to lead to better GDP in the near term than what we're experiencing.

So, opportunity set-wise, it's pretty great. We have to think more, you know, if the U.S.-China is going to continue to be a little bit of an economic Cold War, you know, maybe we need to have more exposure directly toward Chinese businesses because it won't be as easy as us just being able to buy some ADRs in New York. And think about that. But it's too big. You know, we had a call with an economist from a manager in China last week, and one of the statistics that jumped out at me that will not leave my brain is the idea that this year, China will mint 8 million college grads, which is the same number as the rest of the world combined. That's a powerful economic force that's out there. And I don't think as investors, we should ignore that force.

Now, we have to be careful, because investing anywhere where there's political uncertainty can be pretty difficult. And I have no ability to forecast how the political landscape between the U.S. and China is going to work out. But we owe it to our clients to try and think about ways that we can effectively invest in that part of the world.

00:44:04 JANE KORHONEN: Paul, thanks so much for spending the time together.

00:44:07 PAUL CHEW: Enjoy it as always.

00:44:09 JANE KORHONEN: The next time we're together, we're going to be pulling those pieces together on behalf of our clients as we navigate the future. Thanks again.

00:44:21 KEN STUZIN: Hello again, this is Ken Stuzin. Thank you for joining us as we continue this effort to seek out insights that help us understand our rapidly evolving world. If you enjoyed listening, we encourage you to subscribe to the podcast. We will be back with another episode after the holidays -- a conversation with the CEO of the World Food Program USA, the recipient of this year's Nobel Peace Prize, about how greater food security is driving middle-class growth in emerging markets. Until then, be well and stay safe.