Jeffrey Christian: Electric Vehicle Outlook and Precious Metals Update

November 28th 2019

Erik: Joining me next on the program is CPM Group founder, Jeffery Christian.

I want to let our listeners know that we recorded this particular interview all the way back in early February 2019, so we won't be up to date on the latest market developments. But it won't matter because we are going to talk about two really important subjects today that I really appreciate Jeff giving us the time to give us his perspective on.

One is electric vehicles and where energy is going to come from in the future. The other is the changing role of where Russia and China fit in to the geopolitical stratosphere. And, particularly, how the views in China and Russia differ from views that we in the United States might have about China and Russia.

Jeff, thanks so much for joining us on the program. Why don't we go ahead and dive in to electric vehicles, your first topic.

My first question, where is the energy going to come from? And don't say electric or hydrogen, because those are not energy sources. Those are ways of delivering energy that has to be generated some other way.

So where is energy going to come from if not oil in the future?

Jeff: It's interesting, because I wrote a book on electric vehicles in 1979. Stewart Brand reviewed it and he said Mr. Christian is a shill of the nuclear power industry because the only way you can have electric vehicles is to have a massive build of nuclear power plants.

And it's funny because, in 1979, I was not exactly a shill of the nuclear power industry. And, in fact, I participated in this million-person march against nuclear power in Manhattan after Three Mile Island.

But Stewart came along in the mid-'00s and he wrote an article, I think it was in *Mother Jones*, saying I was wrong about nuclear power: If I look at the world's need for electricity, and I look at the environmental degradation that's caused by various energy sources, and I'm wholly aware of the limitations of really building enough solar and wind and tidal wave capacity to have all of this stuff coming from renewable sources, I have to conclude that nuclear power is the least offensive environmental source of the volumes of electricity that the world will

require going forward.

So I wrote him a note and I said, so who is the shill of the nuclear power industry now? But he never wrote back.

It's a real problem. And, clearly, if you look at like the international energy agency in Paris and you look at other people's views, nuclear power probably is going to factor in.

Now, one of the things that has happened is that solar power and wind power and hydro power are coming along faster and further than a lot of people thought. And they are becoming much more important.

And they are also important in terms of (as you mentioned) hydrogen because (a) they generate electricity. But also they can be used to generate hydrogen, if we were to succeed in moving to a hydrogen economy.

So I think that – you know, when you start looking at it, it's going to be a combination of fuels, including hydrocarbons, including nuclear, including solar and wind power.

And it's interesting because, in the metals business, all these people are talking about how a third of the cars being built in 2025-2030 are going to be electric.

And the auto industry and the electric-generating industry and the electric grid operators say there is no way that we can meet that kind of demand for like 33-35 million cars a year. We can't produce enough components. We can't produce enough electricity. And the grids are not stable enough to deliver that electricity in virtually all parts of the world.

Erik: So is that answer essentially there has to be a nuclear renaissance? Or is it still up in the air as to what happens?

Jeff: I think it's up in the air. And I think what you're going to see is a variety of power sources. But I do think that nuclear power will have to come back.

If you look at the nuclear industry and if you look at the power generated by it, it's amazing because, in the United States for example, we haven't really built a new nuclear power plant since the 1970s. But nuclear as a share of energy sources is much higher today than it was in the 1970s. And that's in a greatly expanded power generation business.

What you've found is that those nuclear power plants that were built in the '50s, '60s, and '70s have been retrofitted and upgraded. And (a) they are living far longer than people thought they would and (b) they are generating far more electricity.

So I do think that there is the scope for a nuclear renaissance. But you do have political and social problems with it. And you do have the problems that, when things go bad with a nuclear

power plant, they go bad big time, in a devastating way.

Erik: Let's go ahead and get into your presentation. For the benefit of our listeners, there is a slide deck that Jeff put together to accompany this interview. You can find the download link next to Jeff's picture on our home page at macrovoices.com.

Jeff, as we dive into that, starting on Pages 2 and 3, what is going to be the motive power for the future? Where are we going to get the energy to run vehicles?

And what metals are going to come into play? Are there battery technologies or other uses of metals that come into this story?

Jeff: It's interesting because, if you go back a few years from when we're talking, if you go back to 2017, 2016, there was a tremendous uncertainty as to what the motive power, the propulsion technology of choice would be in the future.

Was it going to continue to be gasoline and diesel, petroleum fuel? Or compressed natural gas? Electric vehicles, hybrids, fuel cell vehicles were still being talked about. And we liked hydrogen engines.

But by 2018 into 2019, what you've seen is there's been a shift in attitudes in the automotive industry and in related industries and markets. And the view now is that electric vehicles are probably the big winners of all of those. At least for the foreseeable future.

We have a chart in that deck where we show our market share by engine type between now and 2050. And it goes out a third of a century. And people say, how can you project a third of a century? But, because of the long introductory nature of new technologies of this sort, you really have to go out that far.

And our view is that, between now and 2050, electric vehicles are the winners.

So in 2017-2018, about 1% of the new vehicles being built were electric, pure electric. Our view is that by 2050 maybe a third of them are electric, which means that two thirds of them are still burning petroleum fuels, basically.

But when I look at electric vehicles, the way I phrase it for myself late at night is, are electric vehicles 8-track cartridges or CDs?

And I think they are CDs, not 8-track cartridges. Eight-track cartridges were a technology that was introduced that didn't really take off. It was around for 10-15 years and then it disappeared.

CDs, in contrast, are a technology that really started to appear in the early 1980s and it took off big time. And it destroyed the cassette and the vinyl industries, for all intents and purposes.

And it became the mode of choice for having music delivered to your home. And now they're pretty much gone because everybody's gone digital.

And I think that electric vehicles are sort of that kind of technology.

When you look at a new technology, you say, how is this going to be introduced? And there are people who are looking at electric vehicles and say, well, whenever you get a new technology it's introduced very quickly. Look at cell phones and look at digital cameras. But those are technologies that offer better utility to consumers at lower costs. And they get adopted quickly and they take over.

Electric vehicles offer less utility at higher costs. So that's not the right paradigm.

The paradigm are CDs. CDs cost two to three times as much as vinyl and cassettes when they were introduced. But they were a higher fidelity, a higher quality, and people were willing to pay for them until such time as digital delivery over the internet came and basically destroyed the CD market.

So my view is, over the next third of a century, I think electric vehicles are the winners. But over the next 100 years, I'm not sure that electric vehicles will be the winners. Electric vehicles may be an interim technology that we move to because of the pollution and environment issues related to petroleum.

But that, ultimately, I think we do pivot to a hydrogen economy. And, 100 years from now, electric vehicles are as rare as diesel- or gasoline-powered vehicles will be.

Erik: Okay, let's – before we move on past electric vehicles, because that's a trend that you show growing astronomically out through 2050 – I want to talk about where the investment play is there.

Because you talk to a lot of investors, they'll tell you, okay, you've got to look at lithium mining. It's all about lithium mines.

Well, wait a minute. The lithium ion is just one battery chemistry. And there's a lot of research being done on other battery chemistries, because lithium ion has some challenges that have led to fires and other things.

So is it smart to be thinking of this electric vehicle trend that you see coming as a lithium metal trend? Or is it really something very different than that? Because I think a lot of people think of it that way.

Jeff: That's the problem. Our third chart is this hierarchy of uncertainties. What will be the motive power of the future? Will it be electric? Or hybrids? Or hydrogen? Or gasoline?

And, if it's electrics, what battery technologies will it be? And if it's lithium ion batteries, what kind of lithium ion batteries? Because there is just an enormous range of batteries and there are new technologies coming in.

And everybody in the auto industry and the electric vehicle industry, in the battery industry are playing – it's like a roulette table. And they're playing several slots. Because they don't know where it's going to go.

We have cautioned our investors not to get into lithium – mining at least. Because (a) there is plenty of lithium out there. And SQM in Chile and a few other properties in Chile and Argentina can supply all the lithium that the world might possibly need.

In addition to which, if you do see lithium ion batteries coming along, both for electric vehicles and for electricity storage systems in homes and offices and other applications, you will have a lithium recycling industry.

The dirty secret is that lithium ion batteries are recyclable, but they are not recycled. The recyclists take them and they recover the cobalt from them and then they burn off the lithium, right now.

That's going to change and you'll see lithium recycled. Battery manufacturers don't like recycled lithium right now, but they will learn to like it as other industries have learned to like recycled lead and copper and steel and iron.

So there is just a great uncertainty. So we've cautioned people against investing in upstart exploration lithium mines outside of South America.

And we've also cautioned people away from cobalt, because cobalt is being engineered away from the batteries now. They're moving to nickel sulfate and manganese sulfate.

But it's interesting because, while the cobalt sulfate used in lithium ion batteries is a significant portion of the cobalt market, the lithium sulfate and manganese sulfate used in batteries will be a small part of much larger markets that are primarily ferrous alloys.

So it's not necessarily nickel and manganese mining that will benefit from the electric vehicle industry. It will be the chemical processers who take that nickel and manganese and make other things.

And then you have the whole issue of, well, will it even be lithium ion batteries? If it is, will we go to solid-state dry electrolytes? And, all of a sudden, you solve the thermal runaway issue and you don't have to worry about cobalt and manganese?

There are just so many questions out there as to how this technology evolves that it's very hard to figure out where to invest.

And that factors back into the auto industry too.

Because they go to the original equipment manufacturers and they say, we need you guys to build billions of dollars' worth of motor factories and electrical controller factories and continuous variable transmission factories and manganese sulfate and cobalt sulfate factories. But we may never need your product. So please invest billions of dollars in these technologies and we may be there as a customer.

And the OEMs say, I'm sorry, we can't do that.

And the auto industry says, well, we can't give you any price or volume guarantees because (a) we're not in all that great shape financially. And (b) the uncertainty is too great.

So that's going to slow the introduction of electric vehicles. And it's going to compound the problems with investors deciding what industries they should invest in to take advantage of the electric vehicle introductions and revolution.

Erik: Now, the electric vehicle story is one which is very widely discussed.

But a less-discussed couple of trends are fuel cells and hydrogen. And hydrogen comes into play both as a type of fuel cell and also the use of hydrogen in hydrogen engines independent of fuel cells. So why don't we start with fuel cells.

What's a fuel cell and why should we care?

Jeff: A fuel cell is sort of like a battery. They use hydrogen, they oxidize hydrogen. And that produces electricity. And then you can use that electricity to power a car or other things that might use electricity.

The trouble – there are several problems with fuel cells, one of which is that they don't work very well. The technology has been around for probably a century and it's always been the power source of the future. It's never quite been able to be commercialized.

There are people who are looking at fuel cells. For example, Amazon and Walmart have fuel cell forklifts in a few of their warehouses. And what they are finding is that, for these things to be commercially and financially viable, the fuel cell stacks need to last five years. And they don't. They don't even last a year.

I visited a fuel cell manufacturer in Germany years ago, and they were making fuel cell units for home heating. I was looking at them and they said, okay, for this thing to – the payback requires these fuel cells to last eight years or longer. And the payback was, I think, maybe 20 years. But they only warrantied their stacks for 18 months.

So it just didn't work technically. They're not reliable enough. And the math and economics don't make sense.

So we've been a fuel cell skeptic since I started looking at alternative energy technologies in the 1970s. And we continue to be.

The platinum industry has been promoting them. But the fuel cell manufacturers have largely engineered platinum out of the fuel cells so that, even if you did see a fuel cell industry come along – and I don't think you will – they are not going to save the platinum industry in South Africa.

Erik: Let's move on to hydrogen in the context of not being a fuel cell. Now, hydrogen is, I think, the most abundant atom in the universe. But it's also kind of explosive.

So how would you power a vehicle with hydrogen and not have a risk of it basically being a rolling bomb?

Jeff: Well, that's true if fuel cells are hydrogen engines. I'm very much interested in hydrogen engines.

In 1806, the first internal combustion engine was invented by a fellow in France and he used hydrogen as his fuel. And it was a proof-of-concept type of thing. He built an internal combustion engine. He used hydrogen. And he showed that ICE works.

And he knew at the time, hydrogen doesn't make sense because it's explosive and it's hard to make and it's hard to safely ship, store, and use. And that was 1806.

It was about 57 years later when commercial production of petroleum started in western Pennsylvania.

So invention was the mother of necessity. He invented the internal combustion engine. He showed that it worked with hydrogen. And then they went off and discovered that they could distill petroleum into kerosene and gasoline and other fuels that they could use in internal combustion engines.

So hydrogen engines are a proven technology. And they are a very interesting technology.

The problem with fuel cells – one of the problems with fuel cells and one of the problems with hydrogen engines is how do you safely ship, store, and distribute hydrogen?

We've been working with a company that is looking at liquid organic hydrogen carriers. And this is a very interesting technology because what you do is you take a common organic liquid and you hydrogenate it. You add hydrogen atoms to it.

And that gives you a liquid that, in the case of our client, the liquid has a volatility and toxicity similar to gasoline or diesel. So you can ship it, you can store it, and you can distribute it through the existing infrastructure that is used to distribute gasoline and diesel.

You'd have a little bit of retrofitting on the technology, but you save $40 trillion in the United States in terms of building a hydrogen distribution system. And, more importantly, what you do is you have a liquid that is safer to use and store and ship.

Now, the platinum industry in South Africa say, well, if we can get hydrogen safely and affordably distributed, then fuel cells take off. But the auto industry says, no, no, no, understand this:

A petroleum-based internal combustion engine costs about $3,000. And they're pretty complex nowadays because of environmental controls and fuel injection systems and things like that.

An electric battery pack for a vehicle costs about $10,000, depending on what kind of vehicle. A Nissan LEAF obviously lower cost than a Tesla 3.

A fuel cell stack costs $30,000, has higher operating costs, higher maintenance, and doesn't work too well.

And a hydrogen engine costs about $1,500 to make.

So it costs about half of what a current petroleum-based internal combustion engine costs to make. It has fewer moving parts. It has reduced operating costs and maintenance costs.

So the auto industry says, if I can get safe and affordable hydrogen distributed to the pump, I'm going to build hydrogen engines. And Ford and BMW worked with a company that was called Energy Conversion Devices. They demonstrated a 300-mile range on a Ford Focus, probably about 13 years ago.

So it's technology that's out there. And what it comes down to is, with the fuel cells, you have to deal with getting the hydrogen safely and affordably distributed and then making the fuel cells work.

With a hydrogen engine, you just have to get the hydrogen safely and affordably distributed. If you can do that with liquid organic hydrogen carriers, then you pivot quickly from petroleum-based internal combustion engine to a hydrogen internal combustion engine.

It comes back to what I was saying about technological innovation. If you can deliver something that's cheaper and has improved use characteristics, that will be introduced much more quickly.

So hydrogen engines have the capacity to (a) revolutionize the energy market, revolutionize the

petroleum industry, and revolutionize global politics. Because, all of a sudden, certain big parts of the world don't matter the way they used to because you don't need the petroleum.

Erik: I want to come back to my first question, though, because hydrogen is not an energy source. Although it is the most abundant atom in the world, hydrogen in its raw and burnable form has to be created through some energy-intensive process. The ones that I know about are specifically electricity-intensive.

So, if you've got to have a lot of electricity in order to manufacture the hydrogen in the first place, why wouldn't you just use that electricity to recharge your electric vehicles?

Jeff: There are several things that are going on there. And, first up, most commercial hydrogen production right now is byproduct of petroleum refining. So you have this catch-22 that if you replace petroleum refining with hydrogen, you don't have that hydrogen.

There has been a lot of work looking at using electrolysis of water to produce hydrogen and oxygen from water. And it is very energy-intense. Because hydrogen loves to build bonds and it hates to break them. So it's very energy-intensive to break water down into hydrogen and oxygen.

There's been some interesting work with solar and wind power. And, again, the power-generating industry and the power-distributing industry, the grid operators are looking at this.

Because one of the things that they're facing, both with nuclear power and also with wind and solar, is you generate the electricity when the sun's shining and the wind's blowing. And then you have to store it, because those are sometimes off-peak times. So they need a tremendous amount of storage capacity.

And some of the utilities are now saying, well, we can use that excess electricity generated in off-peak times to break down water, store the hydrogen, and then use the hydrogen. You oxidize it, you recombine it to produce water, and that's an extremely heat-generating reaction. And then you can use that to generate electricity through turbines or other applications.

So there are obviously energy losses – breaking down, converting electricity into hydrogen, taking the hydrogen and oxidizing it to produce electricity. But there are other things that are efficiencies that, on an overall utility scale, make more sense doing that.

And, again, then you say, well, if I'm producing that electricity, can I produce it from hydrogen? Do I become a self-fulfilling circle? No. You're still going to need electricity from other sources. And that's something that has to be solved.

Erik: Jeff, if we're going to replace petroleum as the center of everything in vehicle use with hydrogen, first of all, does that mean that it's nuclear-sourced energy? But, particularly, does

that maybe change the balance of power around the world?

Because right now a whole lot of how geopolitics works on this planet has to do with who's got the oil versus who needs the oil.

If it was not oil that we needed, what else would it be that we did need instead? And would that be uranium or something else? And who's got it? And how does that change the balance of power around the world?

Jeff: Yes. First off, you're probably still going to need petroleum for a long period of time. Decades. Decades more.

But if you start shifting to different types of power – nuclear- or hydrogen-based or whatever – you're going to change the political power structure in the world.

In the Middle East, there is a joke that my grandfather rode a camel, my father drove a Mercedes, I fly a jet, and my grandson will ride a camel.

And you have any number of countries that have been the focal point of ongoing problems in terms of international politics and international political stability. And, all of a sudden, those countries would become far less important as a source of petroleum if you were pivoting away from petroleum to hydrogen or to nuclear power.

The other thing is, my good friend Dick Cheney – and I say that sarcastically – Cheney gave a big speech in 1998, I believe in London, in which he said the two big prizes in the world are, first off, Middle Eastern hydrocarbons.

But, more importantly, he said the hydrocarbon industries of the former Soviet Union, which he felt very strongly were at risk (since proven somewhat true) of falling back under the control of the Russian and other regional governments in a way that would be less advantageous for Western oil companies and oil service companies like Haliburton, of which he was the head at the time.

So, all of a sudden, you change the international politics. And petroleum becomes less important. And you start seeing wind, solar, and nuclear. And nuclear becomes different because uranium is much more evenly distributed around the world.

And, obviously, there are certain countries that would do better and certain countries that wouldn't do better. But, like, the United States, Canada, Australia, Namibia – there are any number of countries that have uranium for nuclear power. So you would change all of the dynamics of the global political structure if you pivoted away from petroleum.

Erik: Well, that's a perfect segue into our next topic, which is China and Russia. Because something I've certainly noticed is the view inside the United States about China and Russia

versus what I gathered from living in Hong Kong of how Chinese people think about China is very, very different.

So tell us, economically, where did China fit in the world economy. But, more importantly, how has that changed in the last 10 years? And how do you expect it to change in the next 10 years?

Jeff: It's an interesting one, because, you know, China probably was about 6% of world GDP in 2008. And it's probably closer to about 12-13% now. And the World Bank estimates are that, by 2030 at the latest, it will be about 15% or 16% of world GDP, going up further. So China is clearly growing rapidly, and growing rapidly as a percentage of the world.

And that's important because the Chinese government and the Chinese people want a fair place at the table. It's interesting because, yes, in the United States people, especially politicians, tend to talk about fearing Chinese hegemony and excessive power.

But if you talk to the Chinese government leaders and the Chinese business leaders and Chinese people, what they really want is a fair representation.

Now, their view is that, maybe not 2030, but by 2050 they will be the largest economy. And they should have a lot to say about the fate of the world as the largest economy.

But what they really seem to want, and what they talk about across topics, is moving toward a multi-polar world. So a multi-polar political system. A multi-polar currency regime.

They don't want the yuan to replace the dollar as the *de facto* reserve currency. They want a currency system where the liquidity of any number of countries' currencies is sufficient that those currencies could be used as quasi reserve assets by people around the world.

And they also want changes in domestic monetary regulation so that people can say, I want to hold a certain portion of my wealth in dollars and a certain portion in euros and a certain portion in other currencies. Which, in many countries, you can't do right now.

But the Chinese attitude seems to be, we would like to see a multi-polar world. And we're not necessarily going after hegemony.

There is this very interesting dynamic that you pick up in China. And the way I would explain it is that, across topics – and it could be in the gold business, it could be in the molybdenum market, it could be in international politics – across topics and subjects, the Chinese say that they want to strive for what China wants but they should never been seen as making demands on the world.

And there is this weird thing – because, obviously, they want free trade – but it's free trade as the Chinese communist government would define it. They want mutually beneficial trade, but from the context that they will be the larger, more powerful trading partner in that bilateral

trade.

They do actually want to avoid colonization. And that comes into play with their One Road One Belt move, which is actually (a) they want to help those countries build up, (b) they want to have access to those countries for raw materials and other things.

But (c) they really want to try to help those countries protect themselves from imperialistic pressures from other countries. And you do that by building up your economy and your political system in all those different countries.

And they also have this whole thing about avoiding interference in other countries' domestic affairs. And when you ask them about that, they say, well, we tried that in the past and it never worked out well.

So I think the Chinese have this view of where they'd like to see the world move. And they understand it's a long, slow process. And they want to do whatever they can to help that process occur. And they get a little bit stymied by the US when the US says, no, you're trying to take over the world.

Erik: Speaking of taking over the world, if you listen to US news media, it sounds like we ought to be worried about the aggression that suddenly has developed coming from Russia. But people in Russia actually have the opposite perception. They tend to think it is the US that is the source of the aggression.

So how does that dichotomy get explained?

Jeff: There's a lot of stuff. First off, I don't want to sound like an apologist for Russia, because Russia has its issues. But there is a cultural thing in Russia where they look at the world from Russia, not from the United States.

And they see Russia and then they see what they sort of call the hinterlands, which are the countries immediately surrounding Russia which traditionally Russia has had a lot of power and influence in. And they see that as a buffer. You saw that in the Soviet era with Eastern Europe and the "stans," which they actually annexed into the Soviet Union for a while.

And the Russians I think as a culture – and you have to be careful that you don't overly generalize – the Russians as a culture are worried about outside pressures. And they have good reasons to be worried and they have bad reasons to be worried.

If you take a broader historical view and you go back to 1830, 1820 – I have a chart in my deck about this –

In 1820, China was 33% of the world's GDP. And India another 16%. So those two countries represented half of the world's GDP. France and Russia were tied for third place.

So Russia was the largest or tied for largest economy in Europe. And it was the largest economy, along with France, outside of China and India.

And over the years that deteriorated. So they got down to something very small like 1.9% of global GDP of the global economy in 2008 and probably even less in 2000 if you went back and looked.

So they feel like they have suffered a great diminution of their status in the world. They would like to rebuild it. But they also feel that they can't rebuild it for a variety of reasons, one is that they don't have the systems and resources that China and India have to rebuild their economies.

But, in addition to that, they do feel set upon by the United States. And there is any number of things that the US government has done and done repeatedly that causes that Russian suspicion.

You can go back to the years following World War I and the Russian Revolution when the United States and Britain were funding revolutionaries to fight the Soviets. And US hostilities toward Russia probably predate the Soviet Revolution in 1917.

But, in current times – it's funny, I was talking to some Russian government people a few years ago and I was talking about things that occurred in 1998 and 1999 and in the '00s under George W. Bush and Richard Cheney's presidency.

And they were saying, no, this is not a George W, Bush/Richard Cheney problem. This goes back to George H. Bush and it goes back to the Clinton era. And the US government has repeatedly done things which would cause any country to view the US's intentions with great suspicion.

So they have a lot of justification for being paranoid about what the US is doing.

Erik: Well, Jeff, what is it specifically that the US has done which, from a Russian perspective, is evidence of US aggression as opposed to US responding to Russian aggression, the story that we hear in the US news media?

Jeff: I'll give you a few points.

In 1990, the US government agreed with the Russians orally that, if the Russians allowed Germany to reunify, that we would not expand NATO beyond Germany. And obviously we did. We brought in Poland, we brought in some of the former Soviet republics.

And, when the Russians complained, the US government's response was, well, we never agreed to that in writing. You had problems with Richard Cheney and Wolfowitz.

And Putin came in sort of as a reformer, believe it or not. But what he found was that he was trying to reform a Russia that was really in bad shape in 2000-2001 while the US was very hostile to it.

And he took the oligarchs aside and he said, look, here's the deal. I know you stole corporations from the government and rigged bids. And I know you didn't pay taxes for 10 years. And we won't pursue you for those financial crimes if you do two things.

One is start paying taxes going forward. And the second thing is stay out of politics.

And Mikhail Khordokovsky famously was arrested because he was outside of Putin's party. He was the second largest financier of the Duma elections in 2003. But, if you go back to two weeks before Khordokovsky was arrested, he was on the front page of newspapers around the world talking with Richard Cheney, the vice president of the United States, about the Russian elections that were coming up.

So these guys were very blatant in saying, this is what we're going to do.

I mentioned Cheney's speech in London where he said the big prize is to make sure that we can keep control of Soviet and post-Soviet hydrocarbon assets and keep them out of the hands of the governments there so we can do business with the people who basically stole those assets.

And that would cause me to be suspicious too.

Erik: Jeff, before I let you go, let's touch on what you do there at CPM Group, because I think a lot of people don't realize it's really more than just gold and silver, which you're extremely well-known for.

What do you do at CPM Group and what services do you offer to people?

Jeff: We offer consulting and research and asset management and investment banking advisory services for assets that are related to commodities.

As you can tell from my discussion, I studied Soviet and Chinese politics in university. And I studied political economics in those countries and on a global basis in university. And a lot of that was commodities-oriented.

Then I got into energy and alternative energy markets and I wrote about electric vehicles.

So what we do is across commodities.

Now, most of the stuff is actually precious metals, because that's where most of the money is. If you look at the commodities markets, gold, silver, platinum, palladium represent probably less than 2-3% of global new supply of commodities on an annual basis.

But if you look at gold as a percentage of commodities being traded and invested in, it's closer to 35-40%. So people will come to us and say, I'm interested in commodities-oriented investments. And, as you talk to them, you realize they're really talking about gold, or gold and silver.

So a lot of what we do is gold and silver because that's where the money is. Well, we actually look at lithium, cobalt, manganese, molybdenum, vanadium, oil, gas, hydrogen, helium, and we will do research on those markets.

And that research and our analysis based on that research drives, then, the financial consulting services that we provide producers, governments, users, intermediaries and investors.

Erik: Well, Jeff, I can't thank you enough for a fantastic interview.

Patrick Ceresna and I will be back as MacroVoices continues, right here at macrovoices.com.