

Episode Transcript

Episode Title:

The Global Energy Transition

Guest:

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PROGRAM**

Jon Alterman:

Dan Yergin is the vice chairman of IHS Markit and a director of the Council on Foreign Relations. He's a Pulitzer prize winning author for his book, *The Prize: The Epic Quest for Oil, Money, and Power*, and he's the author of the new book, *The New Map: Energy, Climate and the Clash of Nations*. Dan, welcome to Babel.

Daniel Yergin:

Thank you. Glad to join you today.

Jon Alterman:

I was surprised to read in your book that fracking was only first commercially successful as recently as 1998, and within 10 years it completely changed the energy industry. Has there ever been a demand driven shift that works that quickly, and could there be?

Daniel Yergin:

I don't think so. What happened with fracking is certainly the biggest energy innovation of the twenty-first century, and it happened fast. A lot of people—including in the Middle East—were quite taken by surprise. Even the people who promoted and developed it never imagined at the beginning that it could achieve the scale and have the impact that it has had. In 2008, the United States was importing 60 percent of its oil. Today, the United States is the world's largest producer of oil. The United States is the world's largest producer of natural gas, and it exports both. It's quite an amazing change. There have been other times in history when big new volumes of oil have come into the market rather unexpectedly. Usually, when that happens you do have a price collapse because the supply overwhelms demand. That's what we saw here, but it is really quite remarkable that it happened so fast.

But the other side of innovation is that innovation takes a long time. Fracking started because one guy, George P. Mitchell, became obsessed with the possibility of fracking in 1982. It took 16 years to get to the first breakthrough and another five years to get to the second breakthrough. People said to him, "You're wasting your money. You're wasting your time." All the textbooks said it

wasn't possible, but it turned out that it was possible.

Jon Alterman:

Could we see that kind of innovation on the consumption side, whether it's with electric cars, renewables, hydrogen vehicles, and fuel cells? Could we see that kind of innovation affecting the way people use energy around the world?

Daniel Yergin:

Yes. I think electric cars are very interesting. The first commercial Tesla Roadster appeared on the road in 2008. It was kind of considered a novelty, but now you have General Motors saying that they're going to be out of gasoline cars by 2035. German automakers are saying that they'll transition sooner than that. That's happened pretty quickly, but there, too, it was something based on a battery that was invented in an Exxon laboratory in 1976. At the time, people thought the world was going to run out of oil, so we needed something else. Then, in 2008, the first electric car appears, but this is now happening pretty fast. It is unlike fracking, which was driven by the market. A lot of this is really driven by governments and government policies.

Jon Alterman:

One of the things I found striking in your book is you estimated that by 2050, you'll have two billion cars on the road. We have governments making tremendous commitments toward climate goals and everything else, but the reality of the centrality of gasoline powered vehicles, in your estimation, is going to be with us for more than three more decades.

Daniel Yergin:

It's because cars remain on the road for a long time—12 years on average. Some cars will remain on the road for 15 years. It's going to take a lot more money to create the infrastructure for all of this. One of the things that I don't think people are looking at is what that means in terms of materials. You've got to build these things. A thousand pound electric battery requires about 500,000 pounds of earth to be moved. We've talked about "big oil, so there will be a big shovel," but you're going to need a whole new

supply chain. And everybody is going to rush into this at the same time. It can be accelerated if governments want to put more money into it and make even tougher regulations. They can speed it up.

There'll be pushback because, among other things, there are going to be big job losses as a result of electric cars. The United Auto Workers estimate that 30 percent of auto worker jobs will disappear. Maybe it will be one billion, instead of 1.4 billion cars on the road, but you're not going to change that fleet overnight. The fleet only changes over about 6 percent or so each year.

Jon Alterman:

You're in the energy business. I'm in the Middle East business. Let's talk about how this affects things in the Middle East, for Middle East oil producers who count on the world consuming hydrocarbons and have grown rich on the world consuming hydrocarbons. How does this energy transition play out in the Middle East? Will states be pumping more oil at lower prices? Are their net incomes likely to rise or fall as we go through this process over the next several decades?

Daniel Yergin:

First of all, there has been a change. You can remember when they used to say, "We want to save the oil for our grandchildren." Well, now the grandchildren are in charge, and they're thinking about this in monetary terms. They know what's going on in terms of the energy transition. There are two responses among the producers. One is diversification, and Abu Dhabi has really been in a leadership role on that. Back in 2000, almost all of their GDP was oil derived, but now it's 60 percent non-oil. Saudi Arabia has Vision 2030. It's much more difficult to diversify an economy the size of Saudi Arabia. The year 2030 is only eight and a half years away, so there's a lot to get done. The other response is that producers are listening to what's being said around the world. The Biden administration looks like it's going to constrict. You see that now on federal land leasing. They look at the major companies. Many of these companies are pivoting to say, "We're not going to explore anymore. We're going to reduce our oil production by 40 percent." They still see that

there will be a significant demand, so they see themselves on one hand diversified and on the other hands as being the residual, low cost, low carbon producer of oil and gas that the world will need. I think it's a kind of double response. In that, we're talking mainly about Gulf Arab countries. Iraq is in a different position. Iran is in a different position.

Jon Alterman:

Do they end up in a knife fight to get all the oil out as quickly as they can when prices are still higher, or they going to be able to negotiate an agreement?

Daniel Yergin:

I think the world will still be using a lot of oil and gas in the year 2050, and they're thinking terms of market share. They think that this is their opportunity to increase their market share and that they will be the residual low-cost suppliers. I think the Russians are thinking the same way.

Jon Alterman:

Do you think that that their net income will be relatively near where it is today? Will they watch their income tail off as demand tails off?

Daniel Yergin:

A lot depends upon prices. A little over a year ago we were looking at negative prices and today price is around \$70 a barrel. People are saying that it could be \$80 a barrel, and other people say it could go to \$100 a barrel. So much depends on price, but volume times price equals revenues. Note that the UAE is going from their quota in 2018—3.1 million barrels a day—towards five million barrels a day. I think that they're thinking "market share." Saudi Arabia is going to 13 million barrels a day, maybe more. I think they're thinking "market share." They're watching carefully to see what happens to the United States because oil is now dominated by the big three: Saudi Arabia, Russia and the United States. There are a lot of people in the Biden administration who don't want the United States to be an oil producer. If you pursue a "ban fracking" policy, that's really an "import more oil policy," and that's beneficial to countries that export oil.

Jon Alterman:

You mentioned before that there's very little investor interest in oil right now. People have said, "We're not going to support greater exploration." Is that a blip? Is there so much money in the long tail of the energy transition and the fact we will be using oil for many decades to come that you think people will put money into it?

Daniel Yergin:

Well, the investors themselves are under pressure and the growth of Environmental, Social, and Corporate Governance (ESG) investing, which is a big topic for us at IHS Markit. This brings a whole new set of criteria. There are certainly investors who say, "you know we're not going back to oil and gas." I think, for a lot of investors, it was a combination of ESG and frankly low return because you have price collapses. One is the result of oversupply, and the other is the result of the shale crisis—the shale catastrophe, the plague. After that, the investors left. What's happening now is the shale producers are saying that there's a second shale revolution, which is a revolution in the relationship with investors. We have to give money back to investors, and we have to have ESG policies. You have some oil and gas companies who have a net zero target for 2050. How they get there is a big challenge, and I think what we're looking to see over the next year or two with oil prices up is who gets involved. It was a very easy decision to say I'm not interested in the sector before. I think that now, if you are running a pension fund and you need returns, and this is a profitable sector, you'll invest. I think you'll see some of the investors come back, but you're not going to have this mad rush into oil and gas that we've seen before. I think that if you look at the European supermajors, they've made the decision that they really have to respond to the European investors' zeitgeist, and they're talking about becoming energy companies, rather than oil and gas companies.

Jon Alterman:

For three quarters of a century, energy security was centered in the Middle East. As you look out to 2030 or 2050, what does energy security look like?

Daniel Yergin:

I think energy security changes. A bellwether of that was the attack on Abqaiq in Saudi Arabia that occurred in September 2019. If that had happened 10 years earlier, there would have been panic in the oil market. The impact on the market was almost negligible, and that's because the thinking about energy security has changed. You now have the United States as this major source, and it just changes it. But, I think there are other areas where you could see energy security coming in as an issue. It's an issue for the Chinese, in terms of the South China Sea. I think we are going to see mineral security—or supply chain security—as an issue as the world shifts toward renewables. People notice that China dominates the lithium battery supply chain, so I think we're going to see geopolitics and energy come together again but not so much about oil. This will more depend on supply chains for net zero carbon. I was in a meeting with a senator, and he said we have to right-size our relationship with the Middle East. He would not be saying that were it not for the shale revolution because the United States was importing 60 percent of its oil before that. If it still were, the world would look different than it does today.

Jon Alterman:

People say that the U.S. shale has a horizon and that either for environmental reasons or supply reasons, shale is not going to be able to carry us through the end of the century. Other people disagree. As you look forward, do you see China and the United States having similar long-term interest in U.S. energy, or are they very different?

Daniel Yergin:

China wishes it had the position the United States does because China now imports 75 percent of its oil. One of the things that I write a lot about in *The New Map* is the South China Sea. I think a lot of that debate about the South China Sea is about the transit of oil to China and the security of supply from their point of view. But China also imports oil and natural gas from the United States—it's one way to deal with the trade imbalance. In some ways, I think they like the U.S. shale revolution. It's different with Russia. I was at the St. Petersburg International Energy Forum,

which is Putin's version of Davos. They said that I could ask the first question. My question for him was going to be about diversifying his economy, and on the backside, I mentioned shale. He started shouting at me about how terrible shale is in front of 3,000 people, and I realized that there are two reasons. First, shale oil means that the United States is competing with Russia to supply natural gas to Europe. Secondly, Putin sees shale as an adjunct to U.S. foreign policy. Frankly, people thought the sanctions on Iran in 2012 would fail because the world needed Iranian oil. It turned out that the increase in U.S. oil production in one year was more than Iran was exporting. U.S.-Chinese relations are really deteriorating fast, and people in the Middle East say not to make them choose because for those Gulf producers, China is a big market. They're sending oil east, not west. On the other hand, the security relationship is with the United States. You hear the same thing throughout the world, where suddenly the draw bridges are going up between the United States and China. That will affect the Middle East, a lot.

Jon Alterman:

If China is reliant on Middle Eastern energy and the United States isn't reliant on Middle Eastern energy—whether it's in 2030 or 2040—does that change the way both the United States and China think about the Middle East? China has this direct economic connection and the United States doesn't.

Daniel Yergin:

You see China developing blue water naval capacity, but is it going to see that it needs to step in to assure the security of oil coming from the Gulf? They've gotten closer and closer to it. It may not be welcomed by the countries, but I think that national interest—strategic interest—would propel the Chinese into a stronger role. That's why I put so much emphasis on the South China Sea because that's where the Chinese fear of the U.S. navy interdicting oil supplies is so central.

Jon Alterman:

You are one of the best big picture historians that I've ever read, and a lot of your books have talked about energy and about the U.S. efforts to secure

energy. A lot of the story of securing energy has been about the United States protecting the import of oil from the Middle East to drive the U.S. economy. As you look forward at the next 30 years, do you see there ever being a time when the United States imports large amounts of energy from the Middle East again, or has that time passed?

Daniel Yergin:

How long does this shale resource last? Much of it will either be shrunk by regulation or just by natural processes. Recovery rates are not very high, and shale is not everywhere. Is there a date when it becomes less important? Will the United States still be using a lot of oil? 20 percent of an electric car is plastic. Canada is the major source of imported oil for the United States, so if shale declines, Canada would be the first source. But, of course, there is political opposition to pipelines, and that could mean there is a limit on that source. I don't want to put a date on it—because I don't know what that date would be and any date I guess would probably be wrong—but if you started to see a real slide in U.S. production again, and if demand remained relatively high, then we could start importing oil again from the Middle East. But that seems kind of at the horizon now.

Jon Alterman:

Dan Yergin, thank you very much for joining us on Babel.

Daniel Yergin:

Thank you. Pleasure to be with you.