

# How to Keep Energy Going and Going...

Disruptive Forces in Investing

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**Anu Rajakumar:** Energy markets, a key sector that literally powers out world, has been through quite a bit of volatility over the past few months. Headlines globally have mentioned the rise in energy prices as a result of the crisis between Russia and Ukraine that began back in February. While there are some clear geopolitical and ESG factors that have come to the forefront, in addition to rising inflation, there are a number of other considerations that investors should keep in mind when assessing the opportunities and risks ahead. Could we see stabilization in energy markets in the near term or is higher pricing going to be the new normal for the sector? My name is Anu Rajakumar, and I'm pleased to be joined by Robert Gephardt, Senior Research Analyst and Energy Sector Team Leader for Neuberger Berman's non-investment grade platform, to shed light on the expectation surrounding this crucial sector that impacts us all. Robert, thanks for coming on the show.

**Robert Gephardt:** Thanks Anu, I'm really excited to be here.

**Anu:** So Robert, to get us started, give us some background. What was happening in energy markets before February of this year?

**Robert:** Yeah, absolutely. So the events in February are obviously very tragic and have a lot of implications for the sector, but I think it's important to just think that before all this, you already had energy prices that were increasing in oil, natural gas, refined products -- this was really being driven by a couple of factors. Demand had been recovering stronger than expected coming out of the lockdowns. OPEC+ or OPEC+ Russia had been very cohesive, which typically has not been the case. And then you also had the impact of capital discipline across the sector, particularly in the US shale complex. And what that means is it slowed down the pace of growth and the response of producers to higher prices.

The U.S. had been and remains a key source of supply to the global markets. And what it's really important to note that this capital discipline is being driven by ESG, but not in the way that a lot of people think. It's been driven by improved governance. So the share revolutions from 2010 to, you know, where we are today has delivered enormous benefits through higher energy production. It's transformed the US from being one of the largest energy importers, to one of the largest exporters in oil, natural gas and natural gas liquids.

But despite all these benefits, the sector destroyed enormous amounts of capital. It was a great benefit to everyone but investors. You know, you had negative return on equities, and it was a key source of bankruptcies in credit. And so naturally investors reacted to this, which had been driven by poor governance. So misaligned incentives, lack of accountability, unrealistic capital budgeting. And so what's happened is you've had investors have overhauled the government structures, changed the incentive structures and management teams have responded.

And so this is resulting in producers spending less of their capital, or spending less of their cash flow in drilling, which has a few implications. From a credit perspective, it's improved the credit profiles of these issuers. It's also reduced the amount of supply and the pace at which the supply comes out of the US. And so as we've been, kind of circling back, going into the events of February, you already had relatively tight global markets.

**Anu:** All right, perfect, thank you very much, that's a great primer. And as you mentioned the events in Europe, tragic and shocking and has been part of the cause of a lot of volatility markets in commodity markets recently. You sort of talked a little about the evolution of some of the fundamentals here, so I'm just curious, what are you predicting for energy prices and what does that mean specifically for energy credit where you focus as an investor?

**Robert:** Yeah, that's a great question and as a credit investor we try to not be overly specific about where prices are going. You know, that's not our specialty; our specialty is in finding good companies and underwriting companies. And so what we really spend our time focusing on is just what's this mean for cost curves over the medium term, and so what could we be underwriting as a credit investor? And from that perspective, you know, what we think the recent developments mean is kind of across the different commodities on oil, the impact of sanctions on Russia, not just in terms of on the flows of oil from the near term, but longer term through the withdrawal of Western technology from Russia, which is one of the largest producers of oil, it's going to increase medium cycle prices. And the U.S. going to likely step in, to deliver those volumes onto the global market.

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And then in natural gas, the pivot away of Europe from Russian gas is just going to transform the natural gas markets over the next couple of years. So we expect a structural reset higher in U.S. natural gas prices, partly through an increase in natural gas exports from the U.S. Then when we think about energy credit, you know, all these factors are supportive of credit profiles of US energy issuers, particularly in the non-IG market. However, we think that, you know, one thing that's really important to keep in mind is that the sensitivity of the sector to oil prices is less that it had been in the past.

And this has really profound implications just for the broader non-IG asset classes, because from the period of 2014 to the onset of COVID, high yield had been particularly sensitive to changes in oil prices. And really what's happened is a couple of factors. We talked about capital discipline, and how that's improving the credit profile of issuers through them retaining more cash flow. There's also been a large component of fallen angels. So these are previously investment-grade issuers that were downgraded to high yield. These are typically larger companies than companies that have historically been in non-IG.

But one of the biggest factors is really there's just been a large cleansing of the sector. So if you take any point in time and using the high-yield indices as a backdrop here, at any point in time from 2015 to really the onset of COVID, at any given time if you were to sample the index, 35% of the high-yields universe were eventual defaults. And to put this into kind of – this is 4% of the high-yield market at any given time, where energy companies that would ultimately default. And this drove the whole sector to become very sensitive to oil prices. But through the course of the late stages of the last cycle, those companies have been cleansed from the market; and so what's left is a much higher quality set of energy issuers. So even though this a tailwind, you're already starting from a much stronger place from a compositional standpoint than you had been in the past.

**Anu:** Yeah, just on that point, you mentioned about 35%, from, you know, the last few years, but that has changed. Was that a historical high that 35%? Or sort of was sort of a more recent phenomenon? Because that does sound quite high.

**Robert:** Yeah, we ran an analysis across the whole time period from, call it, beginning of 2015 to the year to the end of 2019. And the average and the median were very similar. So it's been largely consistent. The ultimate wave of defaults would be relatively lumpy in nature, but you had a large component of the sector that the market had correctly identified as being dependent on higher oil prices to support their capital structures. And just that drove the sensitivity asset class to the oil over time.

**Anu:** Yeah, interesting, yeah. And you mentioned, Robert, about the reshaping of global gas markets with the pivot away from Russia. Can you expand on that and maybe speak to what that means for US companies?

**Robert:** Yeah, absolutely. So it is, in our view, going to transform the natural gas markets. And it's really been particular the U.S. and it's threefold in nature. You've got the growing increase in LNG (liquid natural gas), you've had consolidation and regulatory challenges in the U.S. So if you think about what's going on in the LNG markets, even prior to the events in Europe, the LNG markets were relatively tight. You had healthy demand in Asia and in Latin America and you had a large wave of product come on, largely from the U.S.. So, you know, going back to 2008, we were positioned to import natural gas and now we're one of the largest exporters of natural gas.

And the growth and incremental supply was going to come from three places: Qatar, U.S., and Russia. And then the events that have happened, you're taking a lot of the incremental Russian projects likely offline and now Europe who had historically not been a significant source of LNG growth is now going to pivot into the LNG markets. It's unclear exactly how much of that demand will wind up in the LNG market, but it's going to be significant. This incremental supply is likely going to come from the US, and you have a lot of projects that have already been permitted, but construction hasn't started because there's been a pause on construction activity.

It's unclear exactly how much of this is ultimately move into construction, but if all these projects were permitted – and it's not our base case, so it would be about a 15-20% increase in demand from where we are today. And to put that into context, the second largest producing region in the U.S. is about that same size. So it's an enormous amount of incremental demand that could be coming to the US. And then there's also been significant consolidation amongst the gas producers. So if we look at – and it's over a short period of time if we just look at year end '19 to today, the top ten operators are now 50% of the rig count or, you know, 50% of the drilling activity today relative to 25% at year '19. So you've had a significant consolidation which reduces just the amount of supply that can come online, particularly when you put that in context of the capital discipline that we're talking about.

And then thirdly, regulatory challenges are constraining the price at which incremental natural gas will come to market. So the largest source of natural gas in the world is cost source supply, is in the Northeast, in the Marcellus and Utica shales. And it's become increasingly difficult to build new pipelines due to legal challenges as these pipelines go through the

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permitting process. And as a result, it's really frankly impossible to build new pipelines from that region, and those existing pipelines already operating at full capacity, and so as this incremental demand come online, it's going to have to come from higher-cost places in the US that have existing infrastructure that is unutilized that can bring that volume to market. And so putting all those things together, we think that's a structural tail wind from – not just a volume perspective, but also for price.

**Anu:** Excellent, thank you. And you touched on some of this, but I want to maybe expand a bit more. I want to hear a little bit more about how companies are responding to all of these developments that you've mentioned, how are they responding from a capital discipline perspective or from their supply chain perspective and again from your seat, what does this mean for the opportunities within credit?

**Robert:** Yeah, absolutely. So from what we're seeing from the companies, capital discipline is here, impacting how they respond. But producers are still responding to price, right? Capital discipline is reducing the elasticity of supply, but they still were responding to the price. Over the near term, we're seeing it predominantly from the private companies that don't have public shareholders that they need to appease. Supply chain is an impediment. you know, there's a lot of parts in the supply chain that are constrained. But we think that ultimately this can be solved over time as producers commit to higher drilling programs and support higher prices for the suppliers.

And then we're seeing – in the LNG value chain, we're seeing companies really display, I'd say some-some pretty impressive creativity in terms of how they're trying to respond aggressively to the market signals where there's a really wide gap between U.S. natural gas prices here and international prices. And so we're seeing kind of the benefits of capitalism trying to deliver a solution to the market.

What it means for credit, we're seeing opportunities in three areas; mid-stream – so these are companies that benefit from volume and not price. And we're seeing, you know, the ability to find excess spread from companies that might not realize a benefit in volumes or cash flow until '23 or '24 as a result of these developments. Natural gas we talked about how we're undergoing a structural re-rating there, and those dynamics have been increasingly understood by the market, but we think that it's not fully reflected. So we're still finding a lot of value in that part of the market.

And then relatedly, there's select merchant power generation. So natural gas impacts the price of power and also the sanctions on Russian coal are impacting the power markets as well, as a lot of the coal is getting pulled internationally. So that's pulling up power prices. We think the opportunities there are very idiosyncratic in nature, but there's pockets of value and opportunity there as well.

**Anu:** All right, thanks very much Robert. Now we can't really have an episode at *Disruptive Forces* without talking about environmental, social and governance factors, so let's dig into that a little bit deeper. Robert, what do you see as the key ESG factors at play in energy markets today? And that can apply to just energy credit if you like, or more broadly across the energy sector.

**Robert:** Yeah, it's a great question and you can't be in energy and also – without also being an ESG analyst...

**Anu:** [laughs]

**Robert:** We've seen a lot of discussion take on an approach that characterizes in either/or, with respect to fossil fuels and renewable energy in the inner transition. I think the best way to think about it is also the role of reliability, affordability, particularly in the context of social considerations and energy security which are all important when we think about achieving long-term objectives of the energy transition and ultimately carbon neutrality. Because it's not just about the destination, it's also the path at which we get there; and reductions in emissions today, or emissions that are happening sooner, can have a compound impact over time.

And this is where we think the reality, particularly on natural gas is more nuanced, because developments that we just have been talking about, are making wind and solar actually more competitive today than they were previously though the higher natural gas prices and power prices. But there's just limits to the pace and the maximum penetration that these types of resources can have. You know if we think about the significant investment that's been going on in wind and solar in the US, this has been going on, but right now as we stand today, wind and solar only account for about 12% of the volume of power generation in the U.S.

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Coal is 20% today and gas is just shy of 40%. And when we think about how this could build over time, wind and solar, even under decarbonization scenarios, if you look at a bunch of different studies, they still have the limits of being intermittent, which means that you can't turn them on at our desire, and it's very difficult to store this energy that they produce. So the best technology today really only stores through batteries for about six hours. So what do we do when there's an extended period of time where the wind isn't blowing, and the sun isn't shining? And this is where natural gas comes into play, because until we have a real breakthrough on storage, we're still going to need that capacity.

You know, we're talking about the different studies, a lot of them have the volume of natural gas generation declining materially under a 70 or, 90% decarbonization scenario, but you still need the capacity there to back up the renewable resources when they come online. And so if we take this reality that natural gas in some volume is going to be part of the energy mix until we have a breakthrough in technology, then there's the question coming in, well how do we reduce the environmental intensity of the grid fast, and faster than we do it today?

And that's through producers improving their GHG emissions profile. And they can and they should do more. And that scenario where we've been engaging with companies, because if we can use natural gas to displace coal, and then also reduce the environmental intensity of natural gas, you can have a very profound impact on our progress towards net zero, while we're still building out the necessary infrastructure to fully move off of fossil fuels.

**Anu:** Yeah, no, thank you very much, and what you've laid out so far I think presents a lot of the potential opportunities going forward, in energy. Just to balance that for our listeners, give me a couple of the key risks for investors to be aware of here when they're considering this space?

**Robert:** Yeah, absolutely. Well, having covered commodities sectors for a while, when things look great it's usually when there's also a lot of risk. And when we think about energy credit, valuations have improved, particularly since everything in February. And now there's large segments of the sector that are trading inside of the broader market. And so to outperform, it's very dependent on how fast can they improve their credit profiles and not will they improve their credit profiles. It's very much a timing aspect which, you know, makes it very tricky and impacts how we're thinking about security selection.

Longer term as we think about oil, I touched on how, you know, a lot of the energy transition technologies are becoming more competitive today. And so as we think about what's the medium- or longer-term risk to how does this accelerate the energy transition and what does that mean for longer term oil prices? Because once we reach the crest and we start declining in demand, that could have a very profound impact on pricing. Just thinking about that's impacted other commodity sectors in the past once you've seen declines in demand.

And then, there's also policy risk. Particularly when we think about whether it's investments in natural gas or you know LNG supply chain or also the energy transition. A lot of these are very dependent on policymakers putting in, or at least maintaining, certain policies. And so just understanding, you know, how can the reactions of politicians' impact what it means for these companies and their securities.

**Anu:** Yeah, sure absolutely. Thank you very much. Now, Rob, we're going to start wrap up here, so you've given us lots of very rich content so far. Summarize what you think are your key thoughts as we look ahead, for energy markets. What do you do see going forward?

**Robert:** Yeah, I'd say volatility is here to stay. So you know, oil/the geopolitical risk is not going away; and spare capacity has become more limited when we think about what's happening and what will continue to happen to the Russian oil industry. And in natural gas, U.S. gas demand continues to grow, and demand is becoming less price elastic. But we have an increased storage capability. so if we look back to 2014, demand has gone up 35% and we talked about how it's going to continue to go up, but we haven't added any incremental natural gas storage capabilities in the U.S.. And if you think about also coal plants are continually retiring, so that leaves natural gas as the swing fuel for the entire U.S. power grid. But natural gas storage represents about 2% of annual demand, so it just creates a very volatile environment going forward for U.S. natural gas unless you know market signals or Powell's initiatives facilitate the construction of more storage.

And then in the power markets, you know, we talked about the retirements of natural gas – or coal plants, and the increased penetration of renewables and how renewable is intermittent, and that's going to drive a lot of volatility in the power markets until you start to have real advancements in some sort of storage. And whenever you have capital investment, that creates a lot of risk particularly when you have a lot of emerging technologies.

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**Anu:** Terrific, great, well thank you very much for that. Before I let you go Robert, I will be asking you a bonus question as I do to all of the guests on this show. This one, the pun is entirely intended, so Robert, tell us what is something in your day to day that gives you energy? [Laughs] Whether it is a daily tradition, nutrition-related, exercise-related, what is something that gives you energy every day?

**Robert:** That-that – now I-I love that question. You know, I've got two kids, so they energize me, but also they wear me down –

**Anu:** [laughs]

**Robert:** – and so to counteract that, I'd say music of all kinds.

**Anu:** Terrific, any favorite genre of music that you particularly enjoy?

**Robert:** Oh, it doesn't – not on the energize side, but on, you know, kinda just to wrap up the day, jazz. So Miles Davis is a favorite.

**Anu:** Terrific. Thank you very much for sharing. Well Robert, this has been a very enlightening episode. Very much appreciate hearing more about, what's going on, in your particular space and as I mentioned this is a topic that affects pretty much everyone, so thanks for coming on the show, discussing this important issue.

**Robert:** Great. Thank you.

**Anu:** And to our listeners, if you liked what you've heard today and you want to hear more about Robert's thoughts on the topic of energy, please visit the NB Blog, at [www.nb.com/blog](http://www.nb.com/blog). And of course if you'd like to hear more episodes from Disruptive Forces, you can subscribe to the show via Apple Podcast, Google Podcast or Spotify, or you can visit our website, [www.nb.com/DisruptiveForces](http://www.nb.com/DisruptiveForces) for previous episodes as well as more information about our firm and our offerings.

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