



Tortoise's 2024 Mid-Year Market Update

Mark Marifian:

Thank you for joining us for our second-half energy outlook. My name is Mark Marifian. I am the head of business development here at Tortoise. Tortoise, we are your energy partner. For those of you not familiar with our firm, we were founded in 2002, and we've been following the energy markets for more than two decades.

Our investors range, really run the gamut, from retail investors, to advisors, to RAAs and [inaudible 00:00:31], all the way to large institutional investors. Really, the common theme that our investors are looking for is energy and income.

I wanted to provide a quick overview of what's happened so far this year. Get into valuations, fundamentals, and then a new theme that we've seen as well, in terms of AI.

Rob, why don't you go ahead and kick us off, and talk about what happened in the first half of 2024?

Rob Thummel:

Yeah. Thanks, Mark. Thanks for listening. On slide three, you can see that the S&P 500 delivered a great return of 15% during the first half of 2024. AI and the technology sector continued to dominate as the top performing sector in the S&P 500. But remember, there is no AI without EI, or energy infrastructure. The energy sector did outperform eight of the 11 S&P 500 sectors. But underperformed the S&P 500.

More notable is that energy infrastructure stocks have outperformed the S&P 500 year-to-date. Investors have recognized the high free cashflow yield, the attractive dividend yields, and really the essential nature of energy infrastructure driving significant appreciation for this sector.

Shifting to specific sub-sectors within energy on slide four. Once again, MLPs and energy infrastructure stocks really are the clear leaders in the first half of 2024. While clean energy stocks were the biggest laggards.

Mark Marifian:

Rob, one thing that I think has been notable this year is that it seems like correlation has started to drop between the price of crude oil and energy infrastructure stocks. Can you just explain what you're seeing on this chart a bit more?

Rob Thummel:

Yeah. On slide five, a stat that should make us all really smile is the fact that the correlation between changes in energy infrastructure stock prices and movement in oil prices has declined to .27. The correlation is almost half of what it's been in the past years. Thankfully, energy infrastructure stocks are now trading more on the fundamental outlooks, rather than being heavily influenced by commodity price movements.

Not only is the correlation to oil prices falling, but on slide six, this demonstrates that the annual volatility of energy infrastructure stocks is declining as well. Halfway through 2024, the volatility of energy infrastructure stocks is about the same as the S&P 500. This represents a significant improvement from the much higher volatilities that we observed obviously in 2020.

The reduced correlation to oil prices and the decreased volatility to energy infrastructure stocks really makes it more appealing, and energy infrastructure stocks in general more appealing to a broader range of investors. These factors, combined with the strong fundamentals for the sector, and attractive valuations, really position energy infrastructure as a compelling investment opportunity for 2024 and beyond.



Mark Marifian:

Great. Yeah, it's good to see both the volatility and the correlation declining.

Now, let's move to valuations. Rob, we know that obviously performance is up. Can you just walk us through what has happened on this chart, with the valuations for energy infrastructure so far in 2024?

Rob Thummel:

Sure, Mark. Look at the enterprise value EBIDTA on slide eight. It's still below historical norms. Free cashflow yield and dividend yield for the energy infrastructure sector remain much higher than the S&P 500 Index, really at this halfway point of 2024.

Now with the S&P 500 off to such a hot start, both stocks in that index are trading at or above historical highs. The energy infrastructure sector really stands out as one of the few sectors with stocks that are not trading at or above historical valuation metrics. The sector is currently trading at around nine times EBIDTA, compared to historical average of 11-and-a-half times. The sector really remains undervalued, relative to historical norms.

The free cashflow yield of the sector is nearly 10%, so more than twice that of the S&P 500. The dividend yield for many energy infrastructure stocks exceeds 6%, which is almost five times higher than the S&P 500's dividend yield. Plus, energy infrastructure stocks offer more potential for dividend growth.

If you combine really the unique combination of high current income and potential income growth, that's really a unique attribute that energy infrastructure stocks can offer.

Mark Marifian:

Great. Well, let's turn to fundamentals. Rob, what are your expectations? Let's start there, in terms of commodity prices. Let's talk about crude oil and natural gas.

Rob Thummel:

Sure. We think, if you look at the oil and gas futures market, it's a fair representation of the direction of the commodity prices for the remainder of the year. Slide 11 shows the original futures curve for oil and natural gas at the beginning of the year, compared to the actual price and forecasted prices for the remainder of the year. The dotted line represents the oil price curve at the beginning of the year. The curve's moved up about 11% throughout the year, with prices in the 80s.

Conversely, the red dotted line for natural gas is the natural gas price. It was above 250 to start the year, but actual prices have actually ended up much lower halfway through the year. The forecast though, for natural gas prices, at the end of the year really not changed much from the beginning of the year. We feel like this accurately represents what we see commodity prices going forward.

Mark Marifian:

Great. Let's talk about energy demand. Obviously, that can ebb and flow. Less than prices, obviously. But what are you showing here, on page 12?

Rob Thummel:

Slide 12 displays global energy demand since 1983, based on some recently published data from the 73rd Edition of the Statistical Review of World Energy.

This is what's important. Global energy demand in 2023 grew for the 38th time in the last 40 years. Demand, we think, will keep growing in 2024 and beyond. Over the past 40 years, fossil fuels including oil, natural gas, and coal have accounted for over 80% of the global energy supply. Looking forward, we expect this to continue. We expect fossil fuels



to continue to supply more than 80% of the world's energy. Although, the specific mix might change a little bit, shift toward more natural gas and less coal.

Mark Marifian:

We know one form of growth through the US has certainly been energy exports. That's what we're showing here. Can you just talk about this chart a bit more?

Rob Thummel:

Sure. Slide 13 really shows how the US has expanded its role in becoming the largest energy exporter in the world. Leveraging advancements in shale technology, the US has transitioned from being a net energy importer to becoming a net energy exporter. Today, the US holds the title as the world's largest exporter of energy. So far in 2024, US exports of crude oil and refined products have increased by about 5% over the last year.

Now natural gas liquids exports, such as ethane and propane, have actually risen by 9% over the last year. LNG exports from the US temporarily stalled, really due to the delays in the completion of an LNG facility, Exxon's Golden Pass LNG facility. It was expected to come online in 2024. But we expect LNG export growth will return in 2025, when Golden Pass is finished.

We expect that US energy exports will continue to rise at steady rates, supported by really the world's largest energy infrastructure network in the US. The continued expansion enhancement of infrastructure will be critical to maintaining the US position as the largest energy exporter, and meeting increasing global demand for energy.

Mark Marifian:

Up and to the right for energy exports from the US. Does that align with what your expectations are for US energy production growth?

Rob Thummel:

Yeah. We'll be holding it the next couple years. The US is the largest producer of oil and gas in the world, and is expected to maintain that role. You look at forecasts really predicting increased production volumes through 2025. On slide 14, it highlights the growth rates of US oil and natural gas production in 2024 and 2025.

US oil production is forecast to steadily grow by 300,000 to 500,000 barrels per day, translating into annual growth of two to four percent in 2024 and 2025. Now on the natural gas side, due to that delay in that LNG facility that I mentioned earlier and lower natural gas prices in general, US natural gas production is anticipated to decline in 2024, before rebounding and growing by over 2% in 2025.

Mark Marifian:

Just talk to the audience, Rob. Why are we showing electricity demand? That's something that we typically haven't shown in the past. It's been more oil and gas. But now, we're showing electricity demand in there as well.

Rob Thummel:

Yeah. We've added electricity consumption growth to the chart, as it will become a more important variable really to track going forward in our energy outlook in the future.

US electricity consumption is predicted to grow by two to three percent in 2024 and 2025. This growth rate is not driven entirely though by residential electricity usage. It is forecasted to grow between one and two percent. Instead, electricity consumption growth is likely increasing due to more manufacturing and industrial activity, and possibly the early impacts of artificial intelligence, or AI.



Mark Marifian:

Yeah. That's a good segue to AI boosting electricity demand, which has really been a pretty popular topic so far in the first half of this year. Rob, can you just walk us through what you're seeing on this slide here?

Rob Thummel:

Slide 15 illustrates the anticipated surge in AI-driven electricity demand. While AI has long been a growth catalyst for the technology sector, it's now emerging as a significant growth driver for the energy sector, as the essential nature of AI infrastructure really becomes evident.

Data centers are the beating heart behind AI. The number of data centers is growing. The size of data centers is getting larger. The technology house inside the data centers is demanding more electricity. All of these factors is expected to usher in a new era of electricity growth, presenting opportunities not only for electric generation companies, but also across the broader energy sector.

The projection provided on this slide underscores really this paradigm shift, of forecasting a substantial increase in data center power consumption. Specifically, a growth of 15 gigawatts between 2023 and 2030 is anticipated, reflecting the heightened demand of electricity fueled by the expanding AI landscape.

Mark Marifian:

That's a good oversight of the opportunity. I think it's also we're starting to see this play out in real time. Rob, can you talk about what we're showing on this slide specifically?

Rob Thummel:

Yeah. Look what's happening in Northern Virginia, also known as Data Center Alley. Northern Virginia has been deemed Data Center Alley, really due to the high concentration of data centers. Frankly, the largest number of facilities in the world. If you look on slide 16, you can see that in 2020, the anticipated growth in electricity demand provided by Dominion, which is the largest provider of electricity in Northern Virginia, it was around 1%. But now, look at that change. The most recent filing that Dominion has provided now forecasts over 6% annual load growth through 2030. This really is a significant change.

The key driver of this change, the rapid expansion of data centers in Northern Virginia and across the US.

Mark Marifian:

We know that renewables are being talked about as opportunities. Can you just talk about what this slide's exactly saying, "not all megawatts are created equal?"

Rob Thummel:

Yeah. Renewables, wind and solar, they have a role in generating electricity. On slide 17 though, as you highlight, Mark, not all megawatts are created equal. This is the point, this is what we want to make.

Let me give you an example. This was provided by Vistra, and I think it's a really good example. You have to provide reliable power, especially for AI. To reliably power, in this example, 200,000 homes, the US electricity grid requires either a 1000-megawatt natural gas plant, or a 9000-megawatt renewable energy facility that includes wind, solar, and battery storage.

Why is so much more electricity generation needed for renewables? Well, wind and solar power in general is intermittent, it's not steady. It's not continuous. The capacity needed for renewable energy is nine times larger than is needed for natural gas. In this example, the capital investment required for renewable energy to power the same



number of homes is 10 times higher than that for natural gas. Providing reliable electricity for 200,000 homes requires a \$1 billion investment for natural gas, compared to a \$10.3 billion investment for renewables.

Both solar and wind energy exhibit these intermittent patterns, so it really makes them unreliable as the sole sources of electricity for facilities that require continuous power, such as AI factories.

Mark Marifian:

Which is a good segue to natural gas. And how is it going to play a role in the AI boom?

Rob Thummel:

You can see, slide 18. Natural gas, we think, will be the leading, well it already is the leading energy source of the electricity generation, constituting over 43% of the current supply in 2023. We think that natural gas will experience the growth, end growth, as electricity demand increases.

As I mentioned earlier, maintain this continuous, reliable electricity is really, really crucial for uninterrupted data center operations. Natural gas really is seen as the most reliable, low-cost fuel option to really fuel this AI boom.

Nuclear generation is another reliable option and will participate. But remember, the last nuclear power plant that came into service was in May 2024. But it was basically seven years behind schedule and cost \$30 billion, so more than twice the original budget. Nuclear is a reliable option, but not a low-cost one.

Really, the surge in natural gas demand supported increase electricity consumption presents an avenue of growth for a lot of natural gas going forward.

Mark Marifian:

Rob, just to build on that. What do you think the potential impact is on natural gas, when you combine the AI development now with LNG?

Rob Thummel:

Yeah. This slide is really interesting, and is probably one of the better ones. Natural gas that fuel AI boom could result in a demand increase for your US produced natural gas, increasing in the range of seven to 16 billion cubic feet per day.

Now, even before the emergence of AI as a potential catalyst, the US energy sector was already poised for expansion, and the natural gas sector was already poised for expansion. If you look at LNG export, LNG exports are likely to increase between now and 2030. They're likely to double. US LNG exports are forecasted to grow between 12 to 13 billion cubic feet per day by 2030.

When you consider both sources of growth, you can see that we could witness an almost 30% increase in natural gas production by 2030. This increased demand really stresses the necessity for expanded production capabilities for US natural gas. But also, the augmentation of really critical natural gas infrastructure to accommodate this surge in volume.

Mark Marifian:

It's a story that's rapidly developing. We're looking forward to see this growth come.

Now we know that the infrastructure network across the country is large. Just maybe talk about the resiliency, and the opportunity that you see for our energy infrastructure here.

Rob Thummel:

Sure. From our vantage point, energy infrastructure is just as pivotal to AI development as the technology itself. Let me end where I start. There is no AI without EI, or energy infrastructure. Nvidia, the CEO, Jensen Huang, talks about building AI factories. These factories require one key element. Unwavering power supply. Without interruption, AI factories



demand electricity 24 hours a day, seven days a week. Reliable electricity generation really hinges on a dependable fuel source. Natural gas is the low cost, low carbon, dependable solution really poised to fuel the future of AI.

However, US produced natural gas needs US natural gas pipelines and a network to deliver that natural gas to these key demand regions, including electricity generation. On this last slide, it illustrates the size and the complexity of the US natural gas energy infrastructure network. That is the largest in the world. There's hundreds of thousands of miles of pipeline. These pipelines serve as the lifeline boosting the US economic activity, but also ensuring that the growing number of AI data centers receive continuous power, year after year, 24 hours a day, seven days a week.

The most essential pipelines are operated by publicly traded energy infrastructure companies. Many of these companies possess the coveted economic moat that Warren Buffet always talks about. But for pipelines, this means their asset footprint is very difficult to replicate or replace. What this means for investors is a steady stream of earnings that convert into cash, allowing these publicly traded energy infrastructure companies to reward investors with high dividend yields. That increases, the economy grows, and they buy back stock.

These core elements of energy infrastructure, in combination with an energy infrastructure sector that trades at a discount to the S&P 500 and historical norms really offers a compelling investment opportunity for what we think is an opportunity that's going to be around for many years to come.

With that, Mark, I will turn it back to you.

Mark Marifian:

Great. Well, it's been a good first half of the year. We'll look to continue to build the momentum for the second half of the year.

Just a quick review of Tortoise's investment solutions and capabilities. You can see that midstream MLPs, that's our longest running track record. Exception was 2003. That remains a bulk of the assets today, at over \$6 billion. We also have differentiated strategies across the energy value chain, and in energy and power infrastructure, both over \$600 million. For those who like a more thematic infrastructure play, we have a water infrastructure and management product line as well.

This is just sharing our territory coverage. If you do have questions, feel free to reach out to those sales individuals who are listed here.

Rob, we appreciate your time. We appreciate your outlook. We'll certainly hope that we can replicate this strong first half with a great second half. Thank you again for joining us today. We'll talk to you soon.

Rob Thummel:

Thanks, everybody.

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