



AI, Power, and Energy Transition

The purpose of this note is to examine the implications for our portfolios of financial and market relationships between our energy ideas/strategy¹ and the Artificial Intelligence investment boom. Our portfolios express caution about AI, and AI index weights and elevated levels of capital spending through underweight exposure compared to the market. Is it inconsistent to remain positive about the outlook for our energy-related ideas through overweight exposure? AI spending is driving demand for energy and energy capex. Could this mean that these are not distinct opportunities and risks?

History

The portfolio ideas that comprise the energy transition portfolio began to take shape at the end of 2021. At the time, markets were euphoric. Interest rates were low, fiscal stimulus measures were robust, valuations were elevated, and SPACs were the hot topic in capital markets. One of the few areas where capital remained scarce was the energy ecosystem. Energy as a sector in the S&P 500 is below 3%² of the overall market (it was as high as 15% in 2008).

Investment institutions regularly announced divestments from oil and gas investments for ESG reasons. For those who were still able to invest in energy, the scars of the 2015 and 2018 shale collapses were still fresh. While traditional energy investments were removed from portfolios, investor appetite for renewable and alternative energy investments remained, also for ESG reasons. Little emphasis was paid to the aging electrical grid in the US, or the fact that alternative energies are intermittent and would require more dynamic power management tools. Electricity prices generally remained stable, and most policy incentives supported renewable energy production, but did not address the existing and prospective transmission and distribution challenges.

This overallocation of capital to alternatives, combined with the underallocation of capital to the wider implications of alternative energy supply (grid, reliability) created an opportunity that has since become our Energy Transition strategy.

¹ AMWH manages a strategy 'Energy Transition'. These portfolio ideas, which comprise Energy Transition, are also included in the 'Global Equity Strategy'

² Source: Bespoke Institutional, Bloomberg as of 11/18/2025



Then

Three portfolio ideas were developed:

Portfolio Idea	Status	Brief Thesis
Energy Transition: Reliable Base Load	Developing	<ul style="list-style-type: none"> Alternative energy stocks require reliable baseload. Amortizing fossil fuel use responsibly with respect to reliable base load supply. Non fossil fuel sources (Nuclear, RNG, etc.) Asymmetry from the long-term lack of capex, capital starvation, cheap
Energy Transition: Carbon Capture	Developing	<ul style="list-style-type: none"> The technology permitting the reduction of carbon emissions to permit the continued usage of fossil fuels. Includes Carbon prices – high prices pushing the pace of innovation Asymmetry from need from installed base, more optionality
Energy Transition: Distributed Generation	Developing	<ul style="list-style-type: none"> The use of alternative energy creates a more fragmented supply. Collecting and distributing this supply requires the smart grid Asymmetry from current grid stress, failsafe requirement, high capital investment a prerequisite for energy transition

The logic was straightforward: we need energy, we need reliable energy, we need a refurbished grid to support more dynamic energy sources. Carbon reduction efforts, since the use of carbon based fuels would continue, should be rewarded. The basic principles behind these ideas remain valid. They have been reinforced by the need for a modern energy complex and infrastructure in order to compete with China. Given the challenges of shifting the physical world quickly in terms of capital required and time, we anticipated the energy transition as a long-term portfolio allocation.

Now

Much has changed since. The war in Europe demonstrated the continent's over-reliance on natural gas from Russia. The conflict has cooled efforts to transition to fully renewable energy in Europe. AI and its power and resource-intensive data centers have highlighted the limitations of our existing power infrastructure. Power constraints are now routinely front-page news. Electricity prices have risen. Nuclear is no longer a dirty word, and the industry continues to receive bipartisan support in the USA.

The Question

The Energy Transition investments in both of our portfolios benefited as the weaknesses of US and developed country power ecosystems were more broadly unveiled. Our ideas, which were initially quite contrarian, have become more mainstream.

AI and its beneficiaries dominate market indices. In our Global Portfolio discipline, we aim to avoid market concentrations and provide fundamental diversification for our investors. The MAG



8 weight is roughly 38% of the S&P 500³. Our portfolio MAG 8 weight is 8.3⁴%. The energy weight of the S&P 500 is 2.9%. Energy Transition ideas comprise 25.1%⁵ of the Global portfolio. Combined, these two elements of our portfolio at 33.6% are still less than the MAG 8 share of the S&P 500. Our dedicated Energy Transition portfolio has no MAG 8 exposure.

(Despite portfolio structures very different from the S&P 500, our portfolios have either mirrored index returns with significantly lower risk measures, or, in the case of the Energy Transition portfolio, outperformed⁶).

Are our Energy Transition investments now simply a subset of the wider AI investment excitement, or do they still have independent risk and return drivers?

Discussion

1. AMWH investors and readers know that we believe the world's digital ambitions are coming up against physical realities. Our "Map of the World" for the last three years is entitled "Digital Abundance, Physical Scarcities". It is now well documented that limitations for resources like power or water have been restricting factors in the pace of data center construction. Our main case for arguing that we do not see our Energy Transition investments (despite now higher valuation multiples referred to in para 3 below) as a cause for medium-term concern is that very significant physical, financial, human, and industry bottlenecks exist, and cannot be remedied quickly.

- a. Human capital is a challenge and a bottleneck. Using grid infrastructure as an example, the US is short of skilled tradespeople like utility linemen. The existing workforce is old. Recent studies suggest that the average age of these workers is in their mid fifties. We see a company like Quanta, that owns its own trade school, as distinctly advantaged in a world with a human capital shortage. The ability to in-source and self-perform is a distinct advantage. Despite the seeming abundance of capital from big AI players today, the sheer size of spending (multiple \$trillions estimated by various consultants and investment banks) and the fact that MAG 8 actors are now accessing debt capital markets suggest that financial constraints are emerging. More flexible regulatory regimes to allow utilities to increase capital spending are becoming evident. In the meantime the symptom of the bottleneck is higher electricity prices.

³ NVDA, AAPL, MSFT, AMZN, GOOG/L, META, TSLA, AVGO

⁴ Source AMWH model account as of 11/19/2025 (Apple, MSFT, GOOGL)

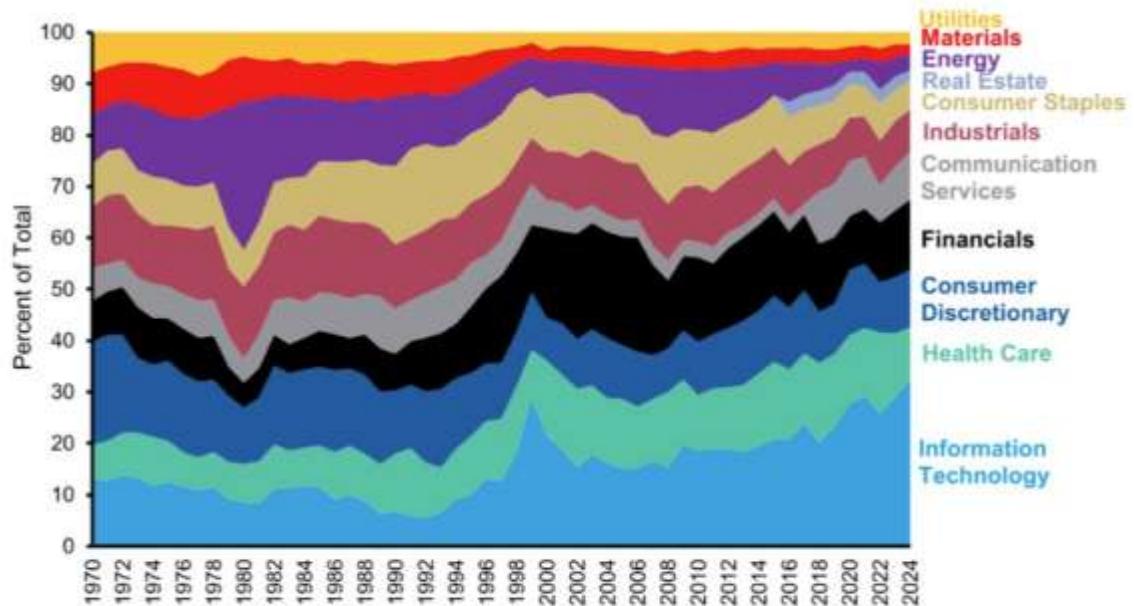
⁵ Source AMWH model account as of 11/19/2025 (AMWH ET Allocations)

⁶ Source AMWH Fact Sheets – Available on request



- b. The nuclear industry was hollowed out. Companies like Constellation and Mirion are survivors operating in a nuclear industry that was extremely challenged, and starved of capital and expertise for the prior decades. The product and technical expertise for the industry is not widely available, creating an incumbent advantage for those businesses that remain. The available nuclear market cap is <1% of the S&P 500 in a sector that is accepted as geopolitically critical⁷. Given the potential scale and timeline of necessary capital spending, we believe that it is unlikely that this can be provided exclusively by private capital, particularly because the providers of private capital are also committed to parallel data center investment. This is an investment bottleneck.
- c. The broader energy complex has also limited capex and exploration both as a result of ESG pressures, and as hydrocarbon resources have become national geopolitical assets. New discoveries replace less and less of consumption. Energy market cap as a percentage of S&P 500 has declined. In our opinion this decline, given the fundamental importance of energy to all economic activity, is an anomaly. It is also our opinion that the relative market weights of technology and energy, on which the former depends, is a greater anomaly

S&P By Sector Over Time



Source: S&P Dow Jones Indices; Compustat; FactSet; Counterpoint Global estimates.

Note: Real estate sector separated from financials in 2016.

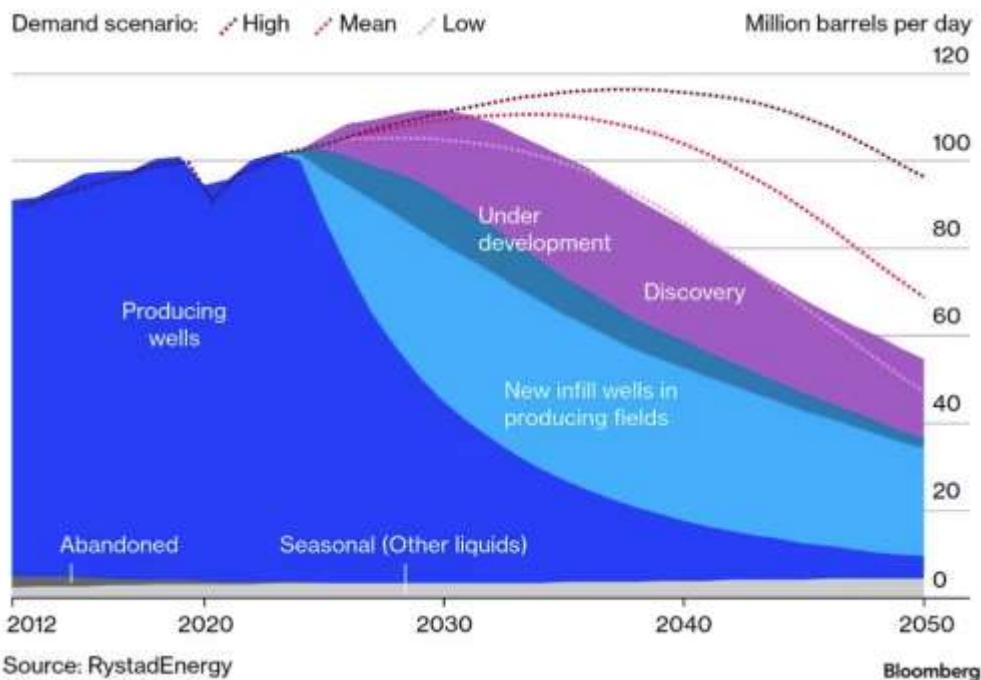
- d. We support the case for climate change, but we also believe that global energy needs will be provided by a mix of alternatives, nuclear and hydrocarbons for a long time. Energy technology and geopolitical competition underpin this

⁷ CEG is ~0.2% of S&P 500



argument. Major oil companies have been forced to discipline uses of capital by ESG considerations, lack of access to new national reserves, and the fading dynamic in the US of shale oil. Whatever political regime is in power, we think it unlikely regulation will undermine the case for the wide energy complex, so we look through the political cycle. Oil stocks are broadly cheap and financially productive, factors which also help to deal with sensitivity to economic activity

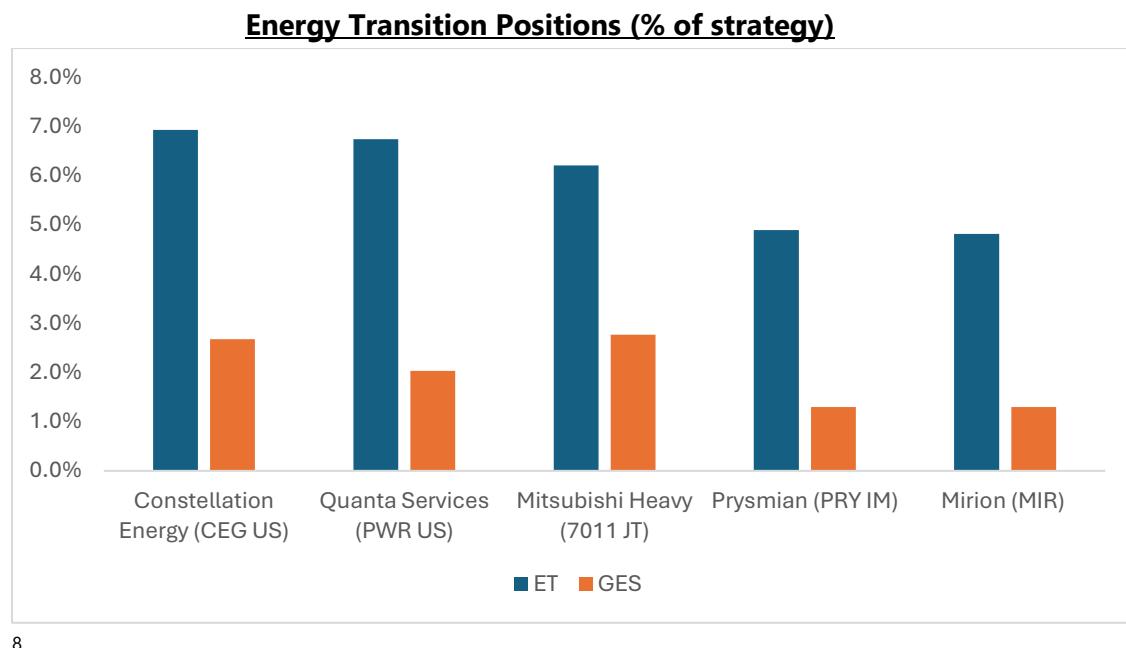
Oil Production and Demand Scenarios



2. We see the following as our energy holdings with the most direct connection to AI market perception: **Mirion, Constellation Energy, Quanta, Prysmian, Mitsubishi Heavy Industries**
 - a. These exposures represent 10.1% of the global portfolio and 29.6% of the Energy Transition strategy
 - b. **Mirion** makes radiation equipment and is a beneficiary of nuclear opex and capex for both nuclear energy and medicinal applications
 - c. **Constellation** is the largest nuclear utility in the USA
 - d. **Quanta** is a specialized contractor serving a comprehensive portfolio of clients, utility, energy, telecom primarily in the US and Canada
 - e. **Prysmian** develops, designs, installs, and produces a wide range of cables for energy and telecom clients
 - f. **Mitsubishi Heavy Industries** is a diversified Japanese industrial with nuclear, gas turbine, and defense businesses



As is apparent from the brief company descriptions, these are not businesses that are expressly focused on data centers. They operate across a mosaic of critical energy-related applications. We used a qualitative lens to define our AI-exposed group, but notably, going by business / end-market, the list would look different.



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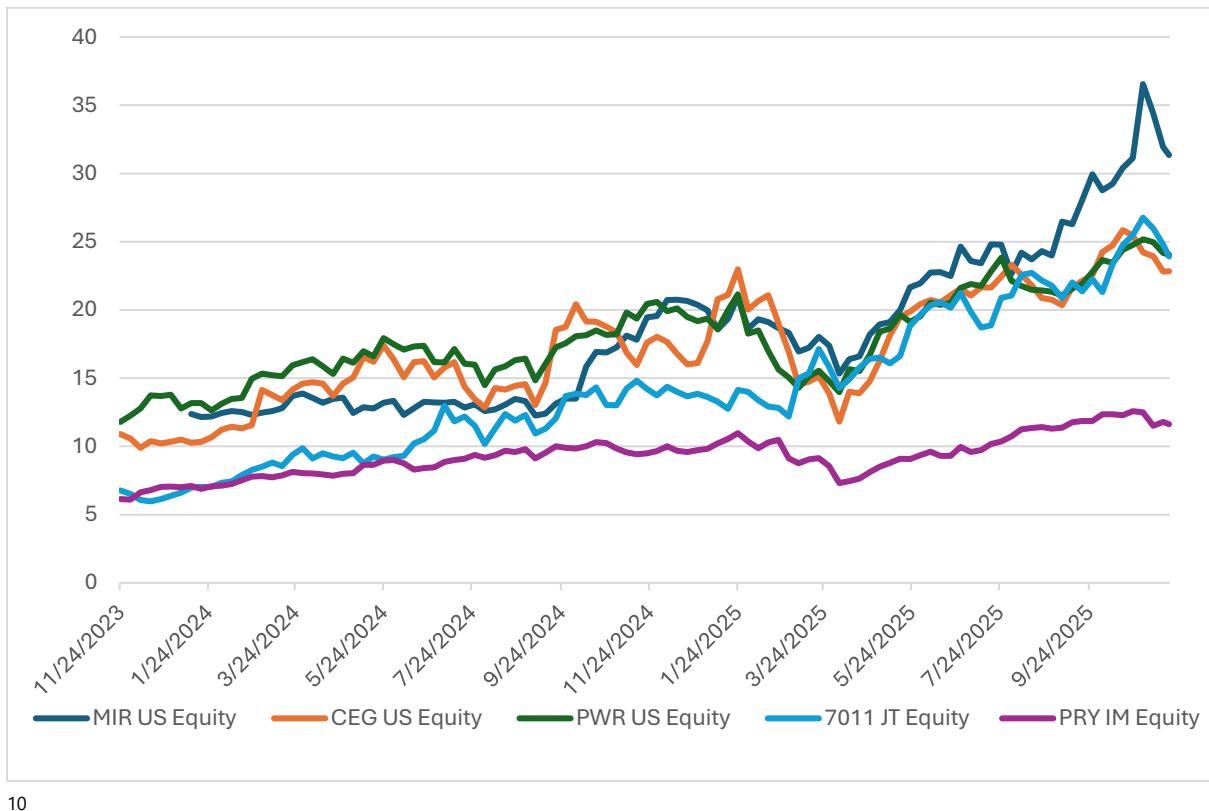
3. Market perceptions have, unsurprisingly, driven up valuation multiples in energy-related holdings that are seen as having the clearest link with AI capital spending. In the scenario where AI and the related companies fall sharply, we would expect parts of the energy portfolio and ideas to fall too. When DeepSeek⁹ was released, that was exactly what happened. A short-term financial market trading relationship undoubtedly exists between AI and certain energy transition holdings. Fundamental business relationships are less direct. This fundamental view should reassert itself in time as investors reflect.

⁸ Source AMWH reporting as of 11/18/2025

⁹ Chinese-based LLM



EV / EBITDA 1 Year Forward Estimates



Conclusion

Our investment theses predate AI and data center power demands. The long-term trends of electrification and an ailing power grid were true before AI. The prevalence of AI and the commensurate data center and power investments have only reinforced the positive asymmetries initially identified in our energy transition portfolio ideas.

The big investment challenge for investors today is the scale and influence on market aggregates of the Mag 8. Any possible market reversal due to changing sentiment about AI capex will initially dominate overall market returns to the downside, the mirror image of effects to the upside so far. In the short run, we think there will be no good hiding place for investors, whether index followers or different thinkers.

Should AI enthusiasm abate in a classic capital cycle bust, it is likely that there will be an adjustment period before the market reminds itself of longer-term drivers of the wider need for reliable and more efficient energy production. Capital spending on the grid is essential for the US economy to remain competitive globally. The difference would be a somewhat slower rate of

¹⁰ Source Bloomberg as of 11/18/2025



capital spending, though still faster than in the last three decades. Lower GDP as a result of a financial bust would dampen returns across the board but would not negate the geopolitical necessity of modernizing the energy complex. The industrial group (construction, engineering etc.) supporting this modernization remains limited in capacity following years out of the spotlight, with significant barriers to entry. Order books are full. Whatever the color of the US Administration, fiscal policy would be used to support economic activity, with the electrical energy complex as a prime beneficiary.

This discussion is focused on our Energy Transition investments rather than the broader portfolio. In this context we remain confident in our investment case, while acknowledging the extreme market setup of the moment. As investors we favor bottlenecks and capital scarcities as investment opportunities, which we believe the Energy Transition still reflects. We think an eventual market reversal could be an attractive opportunity to scale further into our Energy Transition holdings.

Please get in touch if you have any questions or if you would like to join the investment conversation. All ideas are welcome!

Sincerely,

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