

Energy & Utilities

September 2024

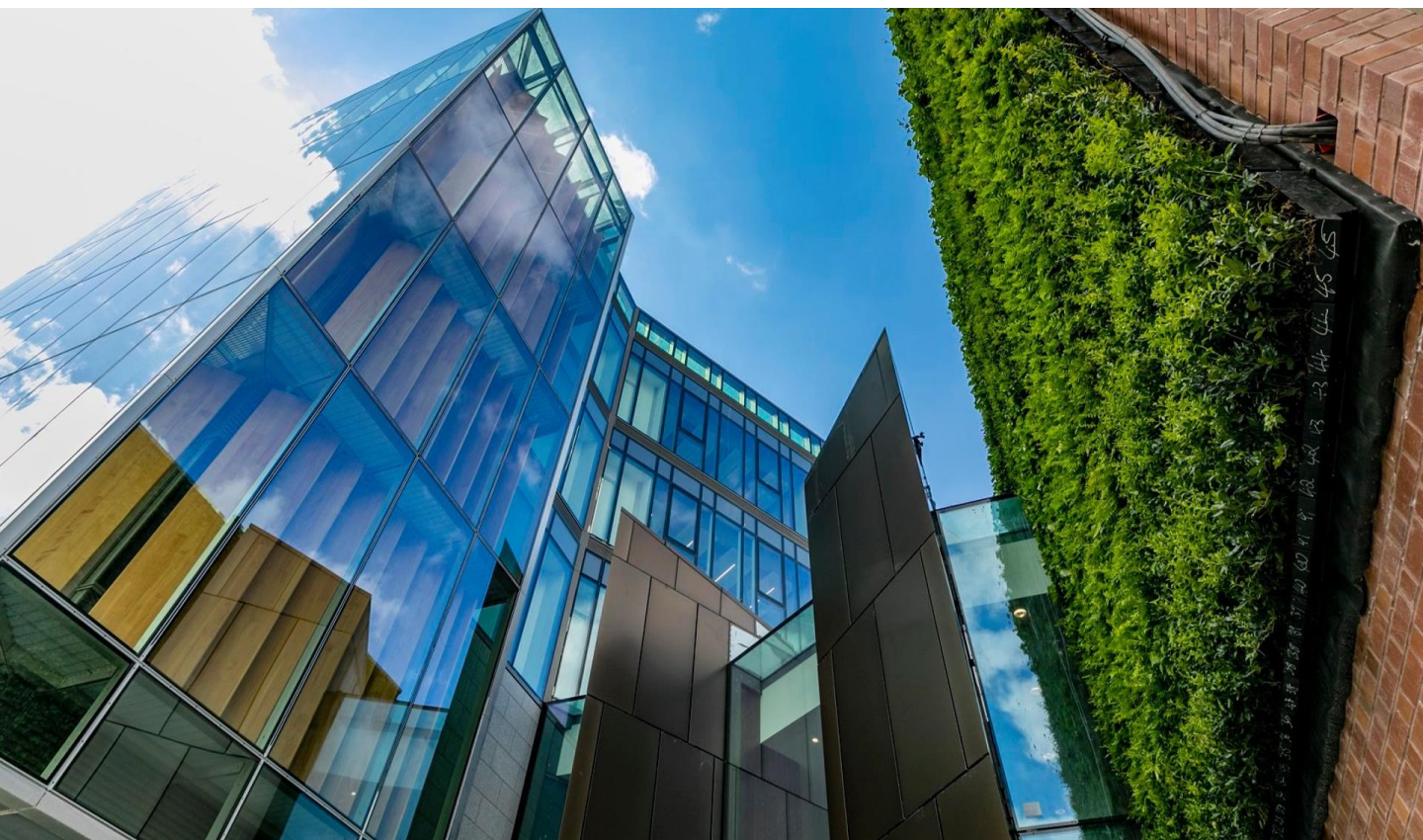


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Sector Overview: Energy

The Energy sector encompasses a wide range of industries involved in the production, distribution, and consumption of energy. The sector is composed of Oil & Gas, Renewable Energy, Nuclear Energy, Coal, Electric Utilities, and Energy Equipment and Services. Oil & Gas is still dominant, comprising exploration, extraction, refining, and distribution. Renewable Energy such as wind, solar, hydroelectric, and geothermal energy are increasingly important, driven by climate change concerns and technological advancements. Nuclear Energy provides a substantial share of electricity in some countries, with ongoing debates about its safety and waste management. Coal use is in decline in many parts of the world due to environmental concerns and competition from cleaner energy sources. Electric Utilities include companies involved in the generation, transmission, and distribution of electricity. Energy Equipment and Services provides supporting infrastructure and technological services, including pipelines, drilling equipment, and smart grid technology.

Historically dominated by traditional oil corporations, often referred to as "supermajors" or "big oil," these industry giants have undergone a transformative shift. While maintaining their involvement across the entire value chain, supermajors have diversified their portfolios by venturing into renewable energy sources like solar, wind, geothermal, hydrogen, and biofuels. As a result, their reliance on oil has dwindled to around 80%, rendering their stock prices less susceptible to oil price fluctuations.

Oil prices hinge on the intricate interplay between global supply and demand, which in turn mirrors the prevailing macro environment. Given the substantial capital investments and ownership of tangible assets like oil reserves, extraction and processing equipment, transportation networks, and infrastructure, energy companies are subject to cyclical patterns and the sway of macroeconomic elements.

Sector Overview: Energy

See below the average sector fundamentals for the sector (MSCI, 2024):

MSCI World Energy Index vs. MSCI World Index Average Fundamentals – Index Returns

	Energy	World
P/E TTM	11.84	22.13
Forward P/E	11.04	18.60
P/BV	1.86	3.43
Dividend Yield (%)	3.61	1.80
Performance YTD (%)	10.83	14.03
Performance 1 Year (%)	11.51	18.89

Energy companies tend to trade at lower valuations compared to the broader global market, as indicated by their lower P/E TTM (11.84 vs. 22.13) and forward P/E ratios (11.04 vs. 18.60). Additionally, Energy companies generally offer higher dividend yields, with an average yield of 3.61% compared to 1.80% for the world index. Despite these lower valuations and higher dividends, their performance has lagged slightly, with YTD performance of 10.83% and 1Y performance of 11.51%, compared to 14.03% and 18.89% for the global market

Sector Overview: Utilities

The utilities sector encompasses companies that provide essential services, including electricity, natural gas, water, and wastewater management. This sector is a fundamental component of the economy, ensuring that households and businesses have access to critical services. Within the utilities sector, dividends remain stable and dependable, exhibiting less price volatility compared to the usual fluctuations seen in equity markets. This sector usually demonstrates resilience during economic downturns and recessions, yet its performance tends to lag other sectors during periods of economic expansion.

The remarkable stability of utilities can be attributed to the predominant use of long-term power purchase agreements that span up to a century. This approach allows for highly predictable earnings forecasting. Notably, these agreements frequently involve governmental entities, thereby enhancing the reliability of earnings. This reliability contributes to the accurate valuation of utility companies and subsequently lowers overall market volatility.

Given the nature of the products provided by utility companies, many of them are owned by the state. This ownership ensures consistent supplies, often aligning with national security considerations.

Similarly, private utility projects are seldom subject to cancellation by governments due to the same concerns, further bolstering the sector's stability and minimizing volatility.

Below demonstrates that the utilities sector has typically underperformed relative to the MSCI world since 2008. This underperformance is due to the fact that utilities are a non-cyclical sector that underperforms during periods of economic expansion.

Sector Overview: Utilities

See below the average sector fundamentals for the sector (MSCI, 2024): MSCI World Utility Index vs. MSCI World Index Average Fundamentals – Price Returns

	Utilities	World
P/E TTM	16.02	22.13
Forward P/E	15.33	18.60
P/BV	1.90	3.43
Dividend Yield (%)	3.70	1.80
Performance YTD (%)	9.43	14.03
Performance 1 Year (%)	6.81	18.89

The dividend yield is high relative to that of the wider equity market. The utilities sector is synonymous with high dividends, so much so that it is seen as an alternative to investing in bonds by many.

The Utilities sector also trades at lower valuations compared to the broader global market, as indicated by its lower P/E TTM (16.02 vs. 22.13) and forward P/E ratios (15.33 vs. 18.60). This sector is well-known for offering higher dividend yields, with an average yield of 3.70% compared to 1.80% for the world index, making it particularly attractive to income-focused investors. The Utilities sector's combination of these high dividends and stable earnings often positions it as a defensive play and an alternative to bonds, especially in uncertain economic environments. However, much like the Energy sector, the Utilities sector has underperformed the broader market recently, with YTD return of 9.43% and 1Y return of 6.81%.

Market Sentiment

The energy and utilities sectors are navigating a complex landscape marked by the push for decarbonization, fluctuating fossil fuel prices, geopolitical tensions, and technological advancements. Investors and stakeholders are increasingly focused on sustainability, innovation, and regulatory frameworks that promote clean energy transition. As of 2024, OPEC+ has shown a preference for moderate production cuts to sustain price levels, reflecting a cautious optimism about demand recovery but acknowledging potential global economic slowdowns.

In terms of peak oil demand, the Organization of the Petroleum Exporting Countries (OPEC) has historically been more conservative in its estimates. In its 2023 World Oil Outlook, OPEC suggested that oil demand might continue to grow until at least the early 2030s. However, even OPEC acknowledges that demand growth will slow significantly as more economies implement energy transition measures and adopt cleaner energy technologies.

The IEA projects global oil demand to continue growing in 2024, albeit at a slower pace than in previous years. Total demand is expected to increase by approximately 1 million barrels per day (bpd), reaching around 102.1 million bpd. This growth is primarily driven by rising demand in emerging markets, especially in Asia, and sectors such as petrochemicals and aviation, which are recovering from the impacts of the COVID-19 pandemic.

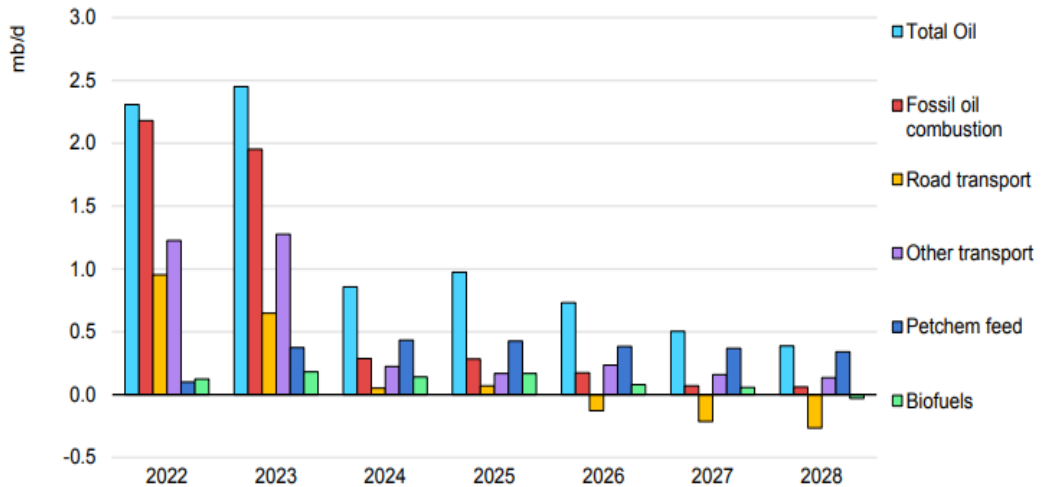
Geopolitical tensions in the Middle East and the upcoming U.S. election are significantly shaping market sentiment, especially within the Energy & Utilities sector. International conflicts, trade disputes, and shifts in foreign policy can disrupt global energy supply chains and affect commodity prices, leading to increased market volatility. Additionally, the election outcome has the potential to alter domestic energy policies, regulations, and investment in renewable technologies, which directly impact the sector's future. Investors and companies are closely monitoring these political developments to anticipate changes that could influence energy production, distribution, and consumption patterns.

Market Sentiment

According to the IEA, global oil supply is expected to meet or slightly exceed demand in 2024, which would help to stabilize inventories. This balance is anticipated due to increased production from non-OPEC countries, particularly the United States, Canada, and Brazil, combined with steady output from OPEC+ members.

However, the IEA notes that supply management by OPEC+ will be crucial to avoid excessive stock builds. The IEA has also indicated that strategic reserve releases, particularly by major consuming countries, are less likely in 2024 compared to previous years when they were used to counteract market tightness. This could mean that strategic reserves will either stabilize or begin to be replenished, contributing to the overall inventory levels.

Annual oil demand growth, 2022-2028



IEA. CC BY 4.0.

Note: Fossil oil combustion is total demand minus feedstock use, other non-energy uses and biofuels consumed.

Theme 1: Traditional and Renewable

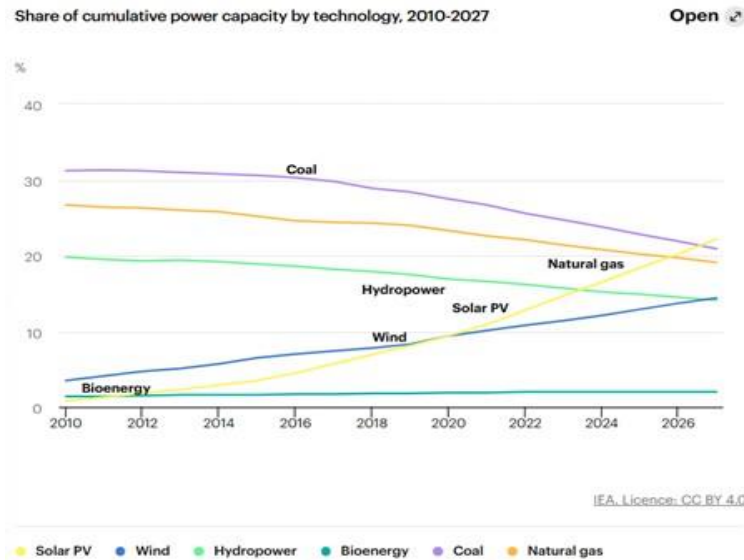
Traditional energies refer to conventional sources like fossil fuels (coal, oil, and natural gas) and often include nuclear energy, which have been the primary means of meeting global energy demands for decades. Characterised by established infrastructures and mature technologies, these energy sources play a significant role in the global economy, impacting sectors from transportation to manufacturing. However, they are associated with environmental concerns such as higher greenhouse gas emissions, leading to increased regulatory scrutiny and shifts in investment trends toward cleaner technologies.

Both solar and wind energies have been the forerunners of renewable sources contributing to a greener environment. The IEA expects both wind and solar PV electricity to more than double in the next five years, providing ~20% of global power generation in 2027. They are continuing to reshape the energy realm with a combined capacity of 2,200 gigawatts (GW) in 2023, up from just 100 GW in 2010.

In terms of cumulative power capacity by technology, they currently represent 26% in comparison to 13.1% five years previous. Cost reductions have propelled growth, ensuring the cost of solar energy is competitive with the costs of fossil fuel-generated electricity and wind energy is expected to follow in the near future.

In March 2023 there was a revision of the EU Renewable Energy Directive which now sets a binding target for 2030 of at least 42.5% share of renewable energy in the EU's gross energy consumption, a significant increase from the previous target of 32%. This amendment is a positive step forward for solar and wind initiatives, as it will accelerate the deployment of these technologies. IEA reports show if countries address regulatory, permitting and policy challenges, global renewable capacity can expand by an additional 25%. The simplification of the permitting process will accelerate project approval, resulting in reduced costs and mitigated risks. This streamlined method is positioned to attract potential investment and narrow the gap for renewable electricity growth needed to meet zero emissions by 2050.

Theme 1: Traditional and Renewable



Solar

The IEA reported solar energy to be the largest expanding power source worldwide, surpassing all alternative sources of electricity. This growth trend can be attributed to the rise in awareness of solar energy benefits as well as the diminishing costs of solar panels.

This surge in capacity demonstrates the uprise in solar energy’s momentum, affirming it’s a booming industry. It’s estimated solar panel costs have decreased by 82% over the past decade thus fuelling its expansion and ensuring greater accessibility and affordability. Solar cell efficiency has now reached 26%, and with the continued exploration to push these boundaries, solar panels are harnessing more sunlight than before.

There has been a great breakthrough with solar energy storage solutions, with an 80% cost reduction in the past decade also signifying the immense effort to set aside energy for rainy days. These efforts contribute to the enhanced reliability and continuous availability of solar power. Looking forward, solar PV is expected to be the cheapest source of electricity with average costs expected to fall by at least 40% by 2050.

Theme 1: Traditional and Renewable

Wind

Wind energy is a predominant source of power generation in the Net Zero Emissions by 2050 Scenario, however, annual wind capacity needs to grow at a considerable rate until 2030 to be on track with this target. Since 2022, global wind electricity generation is up about 10-15%, the second-highest growth among all renewable power technologies following behind solar PV. However, to achieve the Net Zero Emissions by 2050 Scenario, we need the average annual generation growth rate to increase by ~17%, meaning the 75 GW in 2022 will need to be 350 GW in 2030. Enormous efforts need to be put in to facilitate permitting for onshore wind and cost reductions for offshore wind to make these targets attainable.

2024 looks bright for wind power as onshore wind capacity additions are set to expand by 70% to 107 GW reaching an all-time record amount. Aiding this expansion is the commencement of projects in China that were previously delayed due to Covid-19 regulations. Moreover, both Europe and the US are set to experience accelerated growth due to supply chain problems which have caused project timelines to shift from 2023 to 2024.

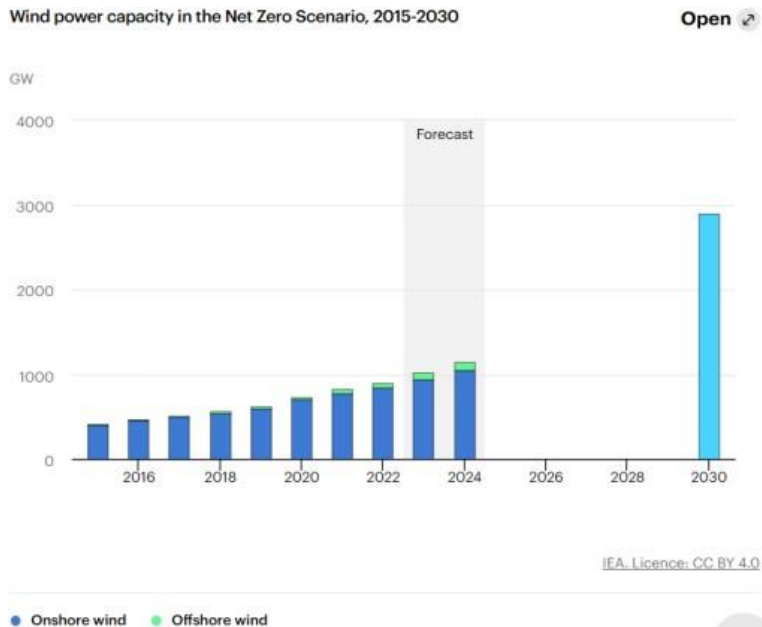
Conversely, offshore wind growth is expected to fall short of the record expansion it experienced two years prior. This deceleration is primarily due to the limited number of projects being commissioned outside of China.

In 2024, onshore systems accounted for 90% of total wind capacity installed while the remaining 10% was offshore systems. These systems are at different lifecycle stages. Onshore systems are well-integrated in today's world with a presence in over 120 countries, whereas offshore systems are present in 25 countries because it's at an early stage of expansion. Nevertheless, the utilisation of offshore technologies is anticipated to surge as countries explore new avenues for renewable resources.

Theme 1: Traditional and Renewable

Supporting the bright years ahead, Windpower Monthly’s August 2024 Windicator index rose to 107.5 points, a leap from 106.5 in July, marking the index’s highest level since January 2023. The global wind energy market’s healthy state can be attributed to the strong demand for wind turbines, with an expected 15% growth in 2024, as well as the favourable government policies implemented to support the development of wind energy. Policies such as China’s 14th Five-Year Plan for Renewable Energy, the Inflationary Reduction Act in the US as well as the RePowerEU Plan within the EU are transforming the pathway to net zero emissions.

Wind power investments increased by 10% in 2023 which has further substantiated the enthusiasm for capacity deployment in 2024. We can see a rise in Turbine Purchase Agreements (TPAs) signed between June and July 2023, with an increase in value from 9.4 GW to 10.8 GW.

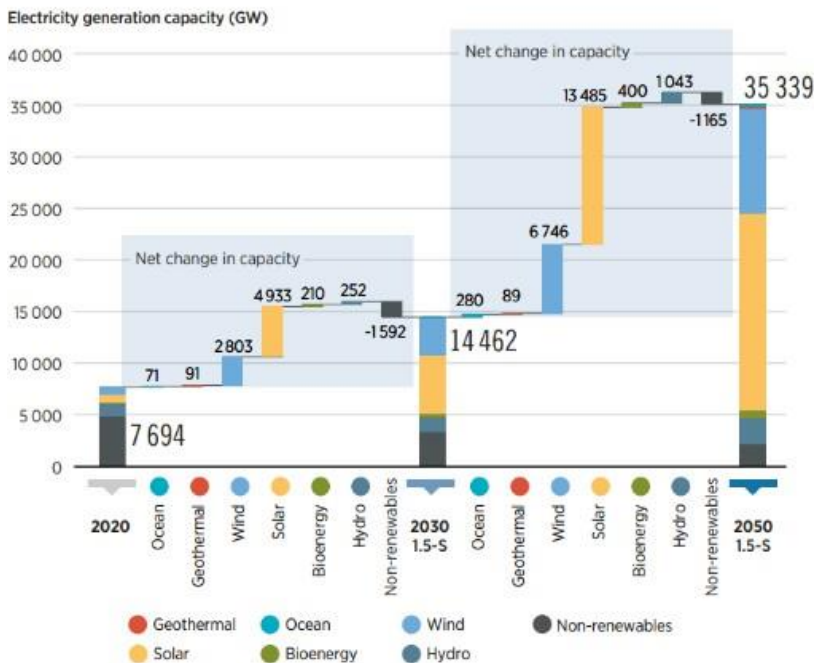


Theme 1: Traditional and Renewable

Between 2024 and 2050, wind capacity is projected to increase by 800%. Wind energy is anticipated to contribute 50% of on-grid electricity in Europe, and 40% in both North America and Latin America. Notably, the cost of onshore wind decreased by 15% YoY in 2021, while offshore wind costs saw a 13% decrease during the same period.

In conclusion, solar and wind energy have solidified their positions as the world’s fastest-growing sources of electricity, and looking ahead, we expect global renewable capacity to increase by almost 75% between 2024 and 2027.

FIGURE 2.4 Total global electricity generation capacity expansion needed by 2030 and 2050 to realise the 1.5°C Scenario



Notes: GW = gigawatt; 1.5-S = 1.5°C Scenario.

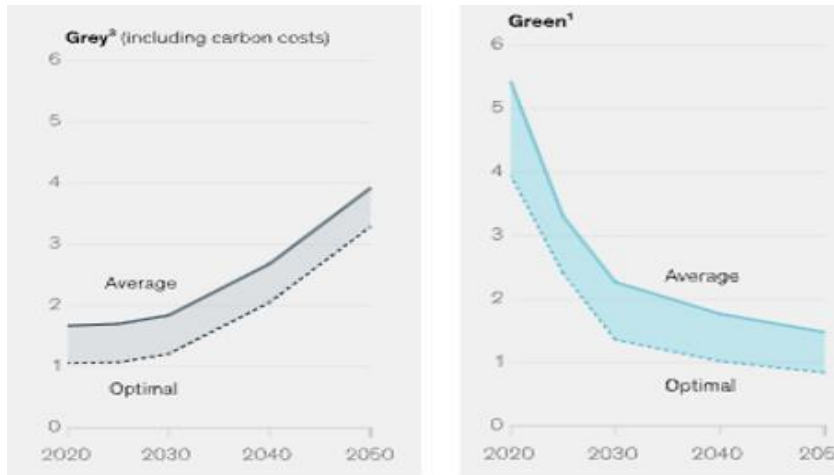
Theme 2: Hydrogen

Hydrogen is the lightest element in the universe, and it has taken centre stage in our relentless pursuit of cleaner energy solutions in 2024. Global renewable capacity dedicated to producing hydrogen is expected to increase by 10,000% over the next five years from. Firstly, we will focus on hydrogen derived from fossil fuels, referred to as grey hydrogen.

Hydrogen has great potential to reshape the energy landscape due to its low environmental footprint and versatility. Its flexibility facilitates the generation of electricity, heating homes, powering vehicles, and producing materials and chemicals. There are clear signs hydrogen will be a key player in the clean energy transition, mainly within heavy industry and long-distance transport. In 2024 global hydrogen production is expected to exceed 100 million tons, a 9 million tonne rise from pre-pandemic levels in 2019. However, this output comes at a cost, emitting an estimated 830 million tonnes of CO₂ per year, the equivalent to CO₂ emissions of the UK and Indonesia combined.

This is when our attention shifts to green hydrogen, a relatively new invention where hydrogen is produced using renewable electricity, sourced from wind or solar power. This process involves splitting water into oxygen and hydrogen. This method is considered a clean energy source as it emits no greenhouse gas emissions, as opposed to conventional hydrogen production methods. While the global production of green hydrogen stood at ~1 million tons in 2023, the global investment to advance green hydrogen technologies stands at ~\$300 billion, with over 1,000 large-scale projects announced globally in mid-2024. An estimated 38 million tons per annum (mtpa) of clean hydrogen supply has been announced globally by 2030, with just less than 1 mtpa deployed today. As it is a relatively new energy source, it is burdened by a higher cost of production compared to its conventional counterpart, however, it's expected to level out in years to come.

Theme 2: Hydrogen



Clean hydrogen costs are expected to decline over the next decade (Production cost of hydrogen, \$ per kilogram)

Although it's still early days for green hydrogen within the transport sector, there is great potential for it to decarbonise the sector. Technologies such as fuel cells, which convert hydrogen and oxygen into electricity to power vehicles, are progressively gaining momentum. 2023 witnessed about 60,000 hydrogen fuel cell vehicles on the roads worldwide, a 20% rise from the year previous. A pivotal driving force motivating hydrogen cell development is the EU's target of achieving 1 million hydrogen-powered vehicles on the road by 2030. Key companies include Air Liquide, Linde plc and Plug Power.

Nonetheless, green hydrogen still faces many challenges that need to be addressed, stemming from the high costs of production to safety regulations and improvement of infrastructure. However, the evolution of green hydrogen within the transport industry creates a promising future. Grey hydrogen is dominant in today's world in terms of volume; however, green hydrogen production is quickly gaining ground and is poised to play a pivotal role in the energy transition in the future. The success of the hydrogen economy relies not only on the reduction in the cost of production but on the duration and expenses required for constructing electrolyzers, establishing distribution networks, creating storage capacities, and the time needed for the global transition of both engines and machinery to adopt hydrogen utilisation. It is said if all hydrogen projects are realised, the production of low-emission hydrogen could reach up to 24 MTPA (Million Tonnes Per Annum) by 2030.

Current Holding: Cheniere

Cheniere Energy (LNG) is a liquified natural gas (LNG) provider headquartered in Houston, Texas, USA. It offers a wide variety of services including gas procurement, liquefaction, transportation, vessel chartering and LNG delivery. It began its LNG operations in 2016 and is now the biggest producer in the US, as well as being the second biggest producer in the world. It is currently has an operating capacity of approximately 45 MTPA (Million Tonnes Per Annum) of LNG, with an additional 10 MTPA under construction.

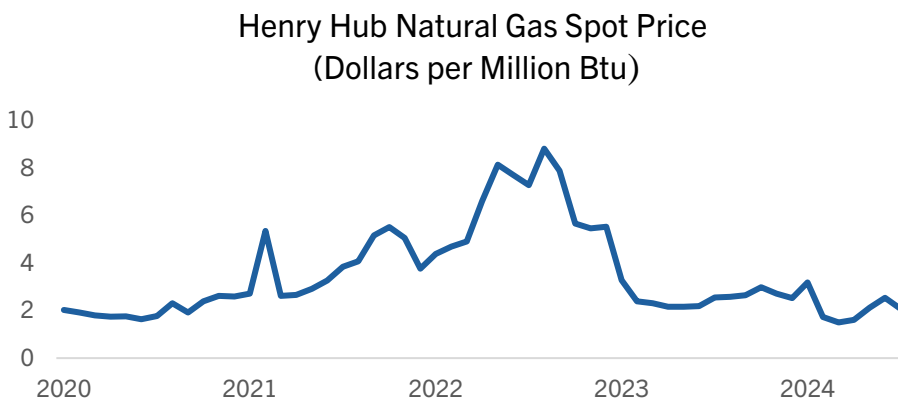
LNG is natural gas that has been cooled down to a liquid state to make it easier to store and transport. It is a cleaner burning fuel than fossil fuels, as natural gas produces half as much CO₂ when burned compared to coal. LNG is also non-explosive; this is another positive attribute as leaks or spills aren't catastrophic. Once transported, the liquified gas can be converted back into its original state by reheating it, a process called regasification.

This year has been a relatively successful year for Cheniere stakeholders. Its market price has risen by 7.9% year to date, as of the 28th of August 2024. Following the gas supply shock of 2022, natural gas markets have gradually rebalanced in 2023 and remained relatively stable over the 2023/24 winter. In North America, Europe and Asia, winter weather conditions were unusually mild, and the improvement in supply fundamentals kept natural gas markets stable, as well as reducing the price of the commodity itself.

Current Holding: Cheniere

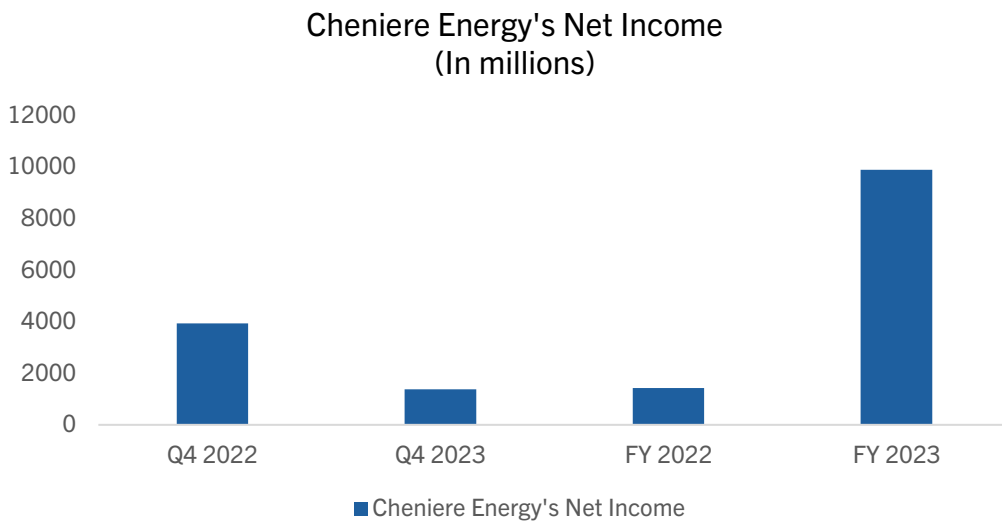
In February 2024, the 2023 Q4 earnings report was released, which reduced LNG stock to its lowest point of the year. Revenue was down from \$33.4 billion in 2022 to \$20.4 billion in 2023, and consolidated adjusted EBITDA decreased by \$2.97 billion. The 42% decline in revenue reflected the normalisation of gas prices post-the 2022 supply shock and was also attributable in part to a higher proportion of LNG sales arising under long-term contracts, which typically have lower margins.

In this regard, Cheniere Energy attributed the majority of this decrease in revenue to changes in the U.S. Henry Hub gas pricing index, against which the majority of its long-term LNG sales contracts are priced. The Henry Hub is a pivotal natural gas line in southern USA, which measures the supply and demand of natural gas, as a stand-alone commodity, enabling a market price to be calculated. This benchmark is used throughout the entire North American natural gas industry and the global LNG industry. Cheniere price their long-term contracts at 115% of the Henry Hub benchmark on average. CEO Jack Fusco also stated that the Arctic freeze in January impacted its operations and made commercial commitments harder to meet. Natural gas production (which feeds US LNG plants) was drastically cut for a week during the freeze.



Current Holding: Cheniere

However, Cheniere’s financial strength was underlined, as it pre-paid \$1.2 billion of consolidated long-term indebtedness, while repurchasing approximately 9.5 million shares of common stock for \$1.5 billion in 2023. It paid quarterly dividends of \$0.435 and \$1.62 per share of common stock in Q4. Net Income also increased by 8.4 billion USD from the previous year, even though the final quarter of 2023 saw a decreased net income from the same period of the previous year.



Cheniere Energy’s 2024 Q1 report in May, consisted of quarterly revenue of \$4.3 billion and net income around \$502 million for the quarter, falling 91% from the previous year. This again was caused by a \$5 billion unfavourable change in the value of derivative instruments, primarily relating to the Henry Hub Benchmark. The CEO explained to shareholders that “all derivative gains (losses) relate to the use of commodity derivative instruments indexed to international gas and LNG prices, primarily related to our long-term Integrated Production Marketing (“IPM”) agreements.”

Current Holding: Cheniere

Yet, on a more positive note, the reported earnings per share (EPS) of \$2.24 matched the company’s forecast, showcasing the company's resilience in a currently volatile energy market. Cheniere also repurchased 7.5 million shares for about \$1.2 billion and the pre-payment of \$150 million of its long-term debt. The company also stated a quarterly dividend of \$0.435 per share, underscoring its commitment to returning value to its shareholders.

In August 2024, Q2 earnings were released which continued the trend of reduced revenue and consolidated adjusted EBITDA from the previous year, caused by the same trend of indexed long-term contracts. The total volume of liquid natural gas exported rose to 553 trillion British thermal units (TBTu) compared to 536 TBTu in Q2 of 2023. Cheniere Energy also repurchased another 3.1 million shares for \$496 million. Quarterly cash dividends from the previous quarter remained the same. 300 million USD of consolidated debt was also paid off.

Over the last five years, returns on capital employed have risen by 40%. The company is effectively making more money per dollar of capital used, and the amount of capital has increased by 30% too. Cheniere Energy is also looking towards Asia as an area of potential growth in the coming years, according to the Q2 2024 investor’s presentation, as Asia is rapidly developing. LNG exports to Asia have steadily risen after the Pandemic and especially in the first half of 2024, due to increasing excess demand across the region.

Cheniere LNG Exports by Destination



Current Holding: Cheniere

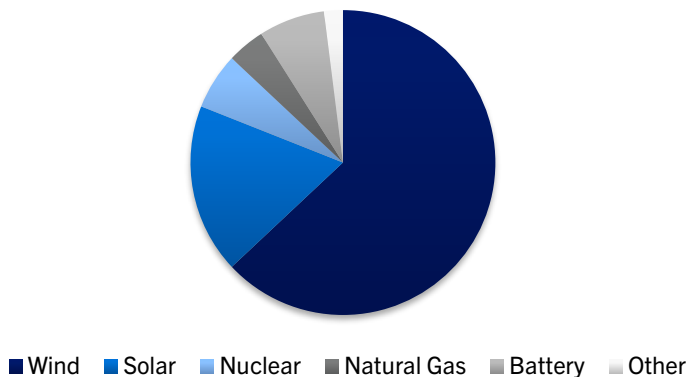
Despite the uncertainty and volatile gas benchmarks, Cheniere is positioned to reap the benefits. According to Cheniere Energy's capital allocation progress, it plans to increase the repurchasing of shares by \$4 billion by 2027. By the end of Q3 of this year it also plans to increase the dividend per stock by 15% to \$2 annually. Cheniere's financial strength is clear in a challenging and unique year in the natural gas industry. The Trinity SMF's book cost for LNG is at an average of \$100.58 per stock, with the market value sitting at \$183, as of the 30th of August 2024. Cheniere Energy has undoubtedly provided a decent return, however 2024 has been a particularly interesting year for LNG so far.

Our stance is that Cheniere is a buy at its current price. Consensus from 17 analysts indicate a 'Strong Buy' recommendation with the average price target at \$206.63, with a high estimate of \$220 and a low estimate of \$191. The increasing emphasis on reducing carbon emissions has elevated LNG as a preferred transitional fuel between traditional fossil fuels and renewable energy sources. Cheniere's long-term contracts and robust customer base provide recurring revenue stability, while its ongoing expansion projects suggest potential for growth. Additionally, geopolitical factors have heightened the importance of energy security, increasing demand for U.S. LNG exports.

Case Study: NextEra Energy

NextEra Energy is an American energy company with a generating capacity of about 72 GW. It is the world's largest electric utility company by market cap (163 billion USD, as of the 28th of August). The firm generates, distributes, and sells electric power to retail and wholesale customers in North America. NextEra Energy (NYSE: NEE) operations consists of two main businesses. Florida Power & Light (FPL) which is the largest electric utility company in Florida, and one of the biggest in the US. The second major business is NextEra Energy Resources (NEER) which is the world's largest producer of renewable wind and solar energy and is a global leader in battery storage. NEER focuses on developing, constructing, and operating long-term contracted assets in the United States and Canada primarily. This also includes renewable generation facilities and electric transmission facilities. NextEra Energy sells energy commodities whilst owning, developing, and operating electric generation facilities in wholesale energy markets. NEE has diverse methods of energy generation and great storage capacity to utilize these methods, with wind being the main source of energy followed by solar.

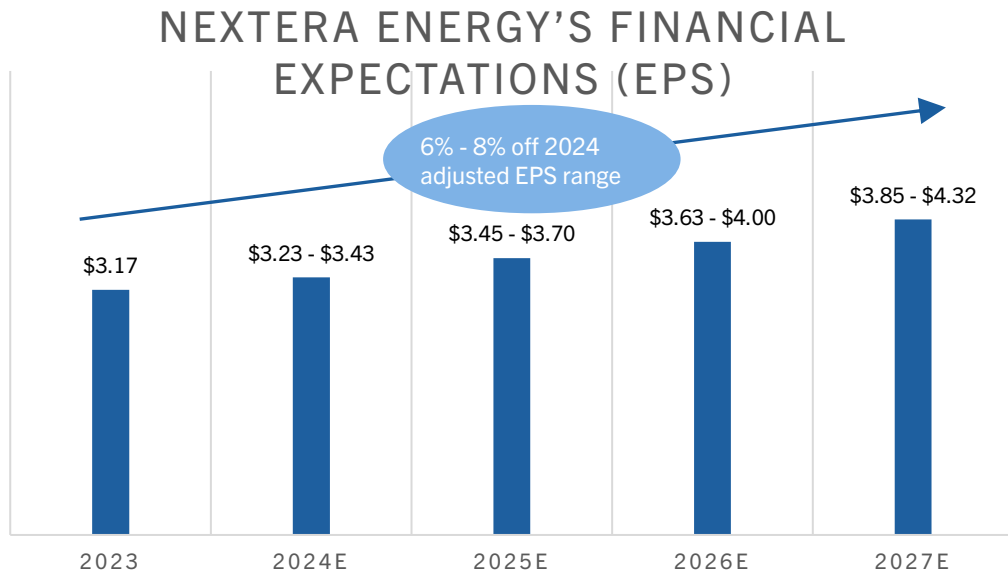
Energy Generation and Storage Capacity



FPL and other regulated assets make up about 70% of NextEra Energy operations, with NEER making up the remaining 30%. However, NEER is the growth engine, which was highlighted in the third quarter of 2023 by 21% year-over-year adjusted earnings growth and with it adding a record level of new clean energy investments. It held 56% of the wind market in 2022 and 38% of the renewable market share between 2019 to 2022.

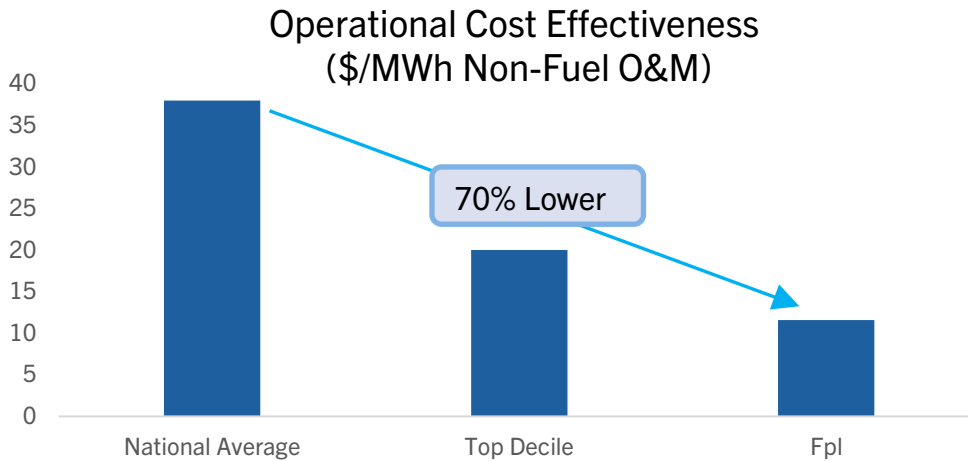
Case Study: NextEra Energy

An attractive feature of this firm is that almost 93% of NEER's revenues are secure through long-term power purchase agreements with major customers including data centres and technology companies, providing stable and predictable cash flows for the company. The business's financial performance is noticeably strong, with adjusted earnings rising by 10.8% in Q2 2024 due to new investments and an expanding renewables portfolio. Whilst with regards to the future, the company expects its EPS to grow by 6-8% each year until 2027 and plans to increase its dividend payments by 10% each year. Since 2013 its adjusted EPS has risen by a CAGR of 10%. During the same time, its dividends per share have grown by a CAGR of 11%. On top of this, NextEra Energy has delivered to shareholders a 651% return over the last 15 years. NextEra Energy is expected to continue its growth due to its dominant position, strong financials, and strategic position in the dynamic Energy sector. As of the second quarter, 81 hedge funds hold NextEra Energy's (NYSE: NEE) stock with stakes worth \$2.1 billion. GQG Partners is the largest shareholder in the company and has \$884.56 million worth of stock as of the end of June.



Case Study: NextEra Energy

Florida Power & Light is also delivering a strong service to its customers, with over 5.8 million accounts, equating to 12 out of the 24 million residents of Florida. FPL’s cost effectiveness is 70% more efficient than the national average, being \$26.38 cheaper in (\$/MWh Non-Fuel Operations & Management). It also is 40% cheaper than the national average per a typical 1,000 kWh Residential Customer Bill. The FPL is also 60% better in average outage minutes. Regulatory capital employed growth has increased by a CAGR of 12% since 2021, highlighting a highly profitable and efficient business model.



The global renewable energy market was valued at \$1.10 trillion in 2024 and is projected to reach \$1.55 trillion by 2028, growing at a CAGR of 8.8%. The International Energy Agency (IEA) has estimated that the global energy demand will increase by 3.4% annually by 2026. NextEra Energy’s approach involves building renewable energy infrastructure but also directly supplying renewable power to corporate clients, which helps these companies meet their net-zero commitments.

Priced In Sector Drivers

EU and US Industrial Policy

The EU and US are shifting towards a more economically interventionist stance, marked by the adoption of robust industrial policies centred around critical infrastructure such as energy. This shift is set to have a significant influence on the sector in the upcoming year. In February 2023, the European Commission introduced the EU Green Deal Industrial Plan. This ambitious initiative aims to bolster European manufacturing capabilities for pivotal technologies essential to achieving binding net-zero targets. The plan relaxes state aid limitations, enabling European countries to actively support domestic clean energy enterprises through measures like reduced taxes, eased regulatory constraints, and access to low-interest loans. This strategic move is poised to particularly benefit clean energy companies in France and Germany. Simultaneously, the US is embracing a nativist "buy American" strategy within the Energy sector. Embodied by the IRA (Inflation Reduction Act), this approach allocates almost \$400 billion in federal funding to propel clean energy initiatives, aiming to slash carbon emissions by 40% before 2030 (Whitehouse.gov, 2023). Interestingly, this dynamic has generated tension between the US and the EU following the escalation of the war in Ukraine. As both entities vie to become the most appealing destinations for clean energy investment, the winning firms will likely be those with the financial ability to make large investments quickly -- large clean energy corporations with low debt and high liquidity.

Windfall Taxes

For many energy companies, the sharp surge in energy prices resulting from the escalation of the conflict in Ukraine has presented a unique opportunity. Many of these firms have witnessed a notable uptick in both their profits and stock prices, capitalising on the increased energy prices. This upward trajectory in prices has translated to substantial windfall gains within the Energy sector, particularly benefiting companies involved in fossil fuel extraction and oil refining. In response to this situation, the United Kingdom and 20 EU member states, among them Ireland, France, and Germany, have acted by introducing windfall taxes targeting the profits of energy corporations. These taxes are especially stringent for electricity producers, with potential levies of up to 90% on profits exceeding prescribed rates per megawatt-hour (MWh). However, these windfall taxes could potentially have unfavourable repercussions on the future investment plans of energy companies operating in the sector. Unlike the United Kingdom and the EU, the United States has refrained from implementing windfall taxes. Consequently, it is possible that American energy firms might experience advantages due to higher cash flows and increased investment throughout 2024.

Priced In Sector Drivers

Growth of Solar

In 2023, solar photovoltaic (PV) power production saw an unprecedented uptick, increasing by a remarkable 270 terawatt-hours (TWh). This rise was a 26% increase compared to the figures for 2022. Solar PV's contribution to the overall global electricity output reached 4.5%, solidifying its position as the third most prominent renewable electricity technology, behind wind and hydropower. The surge in solar PV output in 2023 was predominantly driven by China, responsible for around 38% of the growth. This can be attributed to substantial capacity increases in both 2021 and 2022. Following closely was the European Union, accounting for the second largest growth (17% of the total), trailed by the United States (15%). The US produced 16% more solar power in 2023 than the previous year with, about 31% of this is solar energy coming from small-scale solar installations.

Anticipated Sector Drivers

Potential in Hydrogen

In 2021, the demand for hydrogen reached a significant milestone of 94 million tonnes (Mt). This rebound not only brought the demand back to levels seen before the pandemic but also exceeded the 91 Mt recorded in 2019. The energy stored within this volume of hydrogen roughly equals about 2.5% of the overall global final energy consumption. The bulk of this rise originated from traditional applications in areas such as refining and industry. Nonetheless, there was a remarkable surge in demand for innovative uses, accounting for approximately 40 thousand tonnes. This surge signifies a substantial 60% increase compared to the figures observed in 2020. It's important to note that this growth starts from a relatively low baseline. The rise in Hydrogen investments and usage has also been driven by government targets. The EU, USA, China and the Middle East have set their eyes on hydrogen production as the way of the future.

Global Hydrogen Targets			
EU	USA	China	Middle East
<ul style="list-style-type: none"> • Produce 10MT • Import 10MT. • Exclusively Renewable Hydrogen • By 2030 	<ul style="list-style-type: none"> • 10MTPA Clean Hydrogen, by 2030 • 20MTPA by 2040 • 50MTPA by 2050. 	<ul style="list-style-type: none"> • 50,000 hydrogen-fuelled cars by 2025 • 200,000 tonnes produced/year by 2025 	<ul style="list-style-type: none"> • UAE plans to produce 1.4MTPA, by 2031. • 7.5MTPA. By 2040. • 15MTPA, by 2050. • Saudi Arabia to produce 2.9MTPA by 2030 and 4MTPA by 2035.

Several intriguing and inventive applications for hydrogen are also advancing significantly. Notably, there's a swift emergence of new steel projects, closely following the initial trials that focused on utilising pure hydrogen for direct iron reduction. Additionally, Germany has commenced the operation of its inaugural fleet of hydrogen fuel cell trains. In the sphere of power generation, there is growing interest in hydrogen and ammonia. This trend is evident from the accumulation of projected ventures, which collectively could amass a potential capacity of nearly 3.5 GW by the year 2030. A company poised to benefit from this is Plug Power (PLUG).

Anticipated Sector Drivers

Grid Decentralisation

By 2025, the portion of the decentralised Energy sector in the overall gross electricity production is projected to rise, shifting from around 15% as of 2010 to a range of 26-35%. Presently, less than 15% of companies in the decentralised Energy sector generate revenues beyond this threshold. However, a substantial surge in the significance of the decentralised energy industry is anticipated before 2025. Many companies are expected to witness a decline in electricity sales due to the emergence of decentralised energy structures, while the impact on natural gas sales is predicted to be comparatively less pronounced. The increasing prominence of renewable power generation, when contrasted with conventional power generation's contribution to total electricity production, will underscore the growing importance of decentralised generation solutions for powering residences and workplaces. A company poised to benefit from grid decentralisation is Canadian Solar (CSIQ).

AI

AI is a key discussion point in any industry and will be an integral part of the Energy sector's future. Power systems are becoming more complex as demand for electricity grows and decarbonisation efforts ramp up. Power systems nowadays need to support electricity flowing from a multitude of different directions between different generators and grids, and AI may have a role to play in managing this process.

One of the most common uses of AI in the Energy sector is in the area of predictive maintenance, where the performance of energy assets is continuously monitored and analyzed to identify potential faults ahead of time. Energy firms are creating AI schemes to help monitor assets and use past and current data on performance and outages to predict when intervention is required. E.ON, the utility company has developed a machine learning algorithm to predict when medium voltage cables in their grid need to be replaced, using data from a range of sources to identify patterns in electricity generation, highlighting any inconsistencies or issues before they occur. E.ON's research suggests that predictive maintenance could reduce outages by up to 30% in electricity grids compared to traditional predictive maintenance approaches. This use of AI could save the energy industry time and money, whilst increasing efficiency.

Anticipated Sector Drivers

AI is also helping improve the energy efficiency of carbon-intensive industries. Sophisticated models have been created to predict energy use and optimize energy performance. This involves monitoring heating and air conditioning to improve the efficiency of manufacturing.

AI has also played a key role in the development of smart grids, which are electricity supply networks that use digital communications technology to detect and react to local changes in usage. AI algorithms have been developed that can predict consumption patterns using historical and real-time data, which can help utilities allocate resources more efficiently. For example, during unexpected times of high demand, AI can improve the distribution of electricity, ensuring that power is directed where it's needed most, preventing the risk of blackouts. By considering various factors such as demand, supply, price, and grid conditions, AI algorithms determine the best times to store energy, when to release it, and how much to distribute. For example, renewable energy sources like wind and solar are intermittent. However, energy storage allows excess energy generated during peak times to be stored and used when these sources are not producing electricity. This helps to make renewables more reliable and less dependent on weather conditions.

Sector Risks

Effect of climate change on electricity infrastructure

The impact of climate change reverberates through various aspects of the electricity infrastructure. It influences the effectiveness of power generation, the resilience of transmission and distribution networks, and even the dynamics of demand. In many countries, the increased frequency and intensity of extreme weather events such as heatwaves, cold spells, wildfires, cyclones, and floods are primarily responsible for widespread power outages. Recent occurrences, like the disruption of electricity during a heatwave in California, a cold spell in Texas, and wildfires in Australia, highlight the current vulnerability and significant consequences of climate-related hazards on electricity grids.

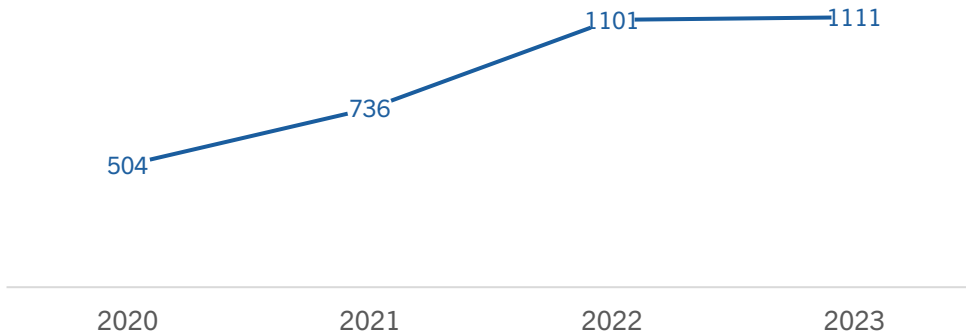
Rising global temperatures could potentially result in decreased efficiency, changes in the capacity for power generation, and adjustments in heating and cooling requirements. Shifts in precipitation patterns may trigger alterations in generation output, capacity, peaks, and variability, all while introducing concrete threats to the integrity of transmission and distribution networks. The upward surge in sea levels has the potential to hinder the expansion of new infrastructure and cause damage to electricity systems located along coastlines. Furthermore, electricity networks remain open to heightened and frequent instances of extreme weather, which can cause physical harm to energy facilities and hamper overall efficiency.

Cyber Threats

Energy is a highly targeted industry for cyberattacks. The complexity of systems and the reliance on legacy OT systems cause them to become desired targets. Cyber attackers know that ransoms will be paid to keep downtime to a minimum. Recently, on the 21st of August 2024, Haliburton, one of the largest oil field service companies was the subject of a cyber-attack. The firm discovered unauthorized access throughout its systems and had to take some of its systems offline to reduce the potential of any harmful impact. This affected the company's business operations, particularly in northern Texas, and senior employees were instructed to not connect to the firm's networks, limiting Haliburton to operate efficiently. A report has not yet been released on the damages and consequences of the attack. Cyber-attacks disrupt operations, resulting in power outages and safety hazards. These attacks accrue significant financial losses due to downtime, system restoration, and legal matters. Supply chains also suffer, negatively affecting firms. Collaborative cybersecurity measures involving governments, regulators, associations, and experts are vital to mitigate these extensive repercussions within the energy industry.

Sector Risks

Average Weekly Number of Cyberattacks on the Energy & Utilities Sector



Emissions Targets

Ambitious emission reduction targets pose a risk for companies primarily involved in the extraction of fossil fuels. For example, in 2023 the EU announced it wants to have reduced net greenhouse gas emissions by 55% by the year of 2030. This helps them to achieve their long-term objective of becoming climate neutral by 2050. Whilst the USA aim to achieve 100% carbon pollution-free electricity by 2035, as well as also achieving a net-zero emissions economy by 2050. The shifting global focus towards cleaner and more sustainable energy sources threatens the long-term viability of energy businesses being reliant on greenhouse gases. However, we believe this risk can be overcome by investing in companies that produce renewable energy such as solar and wind. This transition not only aligns with environmental goals but also allows us to harness the growth potential in the rapidly expanding renewable Energy sector.

Sector Risks

Supply Chains

Instability in supply chains represents a significant threat to energy companies, impacting their operations and resilience. Energy production, including solar panels, relies on intricate networks of suppliers providing essential equipment, materials, and services. Disruptions in any part of this chain can trigger a cascade of effects, causing delays, diminished capacity, or even operational shutdowns. China's pivotal role in solar panel production adds a unique layer of complexity to these supply chain concerns. Many energy companies rely on China as a major source of solar panel components due to its cost-effectiveness. Geopolitical tensions, trade disputes, or disruptions in China's manufacturing sector can thus directly affect global solar panel supply.

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