GAAEX

Guinness Atkinson Alternative Energy Fund
January 2026 Update

GUINNESS ATKINSON FUNDS

2025 IN REVIEW

Improving policy clarity, lower interest rates and surging power demand helped to deliver outperformance for sustainable energy equities in 2025. The energy transition narrative has continued to evolve, moving beyond the early-2020s focus on decarbonization alone toward a more pragmatic emphasis on energy security, affordability and industrial competitiveness. Electrification has emerged as the central secular theme, underpinned by the decarbonization of transport, heating and industry, the reshoring of manufacturing capacity, and the need to improve power systems. Rising electricity demand from data centers and digital infrastructure adds to these pressures, with clean energy alongside storage now the fastest and most competitive power to market. Our portfolio, which offers broad exposure to companies well-positioned to benefit from the growth and improving profitability of these themes, now trades at a 12% one-year forward discount to the MSCI World Index despite offering greater forecast earnings growth.

The energy transition in 2025 has been increasingly shaped by energy security, affordability and industrial competitiveness, against a backdrop of rising power demand driven by the 'electrification of everything', including data centers and the reshoring of industry.

In the **United States,** President Trump's unwinding of the Inflation Reduction Act was not as significant as initially feared, and the passing of his new One Big Beautiful Bill Act (OBBBA) allowed a resumption and acceleration of clean energy activity. Surging electricity demand (as a result of the growth of artificial intelligence (AI) querying and data centers, as well as the wider trend of electrification) has heralded a power crisis that has become a dominant issue for the Trump administration. Their desire to win the 'AI arms race' requires significant grid upgrades; near-term growth in both renewables and natural gas-based power; and a restart to nuclear power in the longer term.

China continued to reap benefits in 2025 from decades of investment in sustainable energy technologies, and the country likely accounted for roughly two-thirds of global solar additions, around 70% of global wind additions and around 60% of global battery electric vehicle (BEV) sales during the year. The country also dominated the manufacturing industry for all three markets. In 2H 2025, China pursued anti-involution efforts to remove excess manufacturing capacity, eradicate aggressive pricing and improve profitability for manufacturers, thereby improving the country's competitive positioning.

European policy remained supportive of the energy transition in 2025. The Clean Industrial Deal was launched to boost industrial competitiveness, streamline bureaucratic processes, improve financing and support power grid manufacturers and clean energy manufacturers. Germany's debt brake reform in February unlocked around €1 trillion in additional investment into defense, infrastructure and energy transition over the next decade. **The 30th United Nations Framework Convention on Climate Change (COP30) fell short of expectations.**

Falling interest rates made the broader **macro environment** more supportive. Global **investment** in clean technologies grew, likely hitting $2.2trn in 2025 (up 10% on 2024 levels and twice the spend on coal, oil and gas in the year) reflecting the fact that renewable electricity is the cheapest form of new electricity supply in most situations. Adding the cost of storage still sees renewables as competitive with the cheapest new fossil-fuel generation. The structural shift towards renewables accelerated with 2025 marking the point at which renewables (including hydropower) overtook coal as the leading source of global electricity generation.

Electric vehicle (EV) sales grew 25% in 2025, with EVs making up one in every four cars sold and annual sales reaching about 22m vehicles. China saw EV penetration increase to over 50% as policy remained supportive and battery costs fell below the $100/kWh (the level widely seen as enabling cost parity with internal combustion engines). In Europe, EVs are now competitive on a total cost of ownership basis in some segments. In contrast, the US remains the most challenging market to electrify, a situation complicated further by the removal of EV purchase tax credits and the addition of tariffs. Globally, battery prices continued to fall in 2025 and are expected to fall below $100/kWh in 2026.

Solar saw another strong year, with installations at almost 700 GW (up nearly five times versus 2020 levels), dominated by China. The US grew only about 5% due to political uncertainty, tariffs and Chinese import restrictions, while grid

connection bottlenecks and permitting delays hampered growth in Europe. India and the Middle East emerged as key demand drivers. The global wind market installations grew around 17% in 2025, reaching an all-time high of 143 GW (onshore was 130 GW). China dominated while Europe, the Middle East, and Africa saw record years.

Against this backdrop, the Guinness Atkinson Alternative Energy Fund delivered a total return (USD) of +26.65% in 2025 vs its benchmark, the MSCI World Index (net return) of +21.1%. Performance was driven principally by sharply positive revisions for global power demand and the secular theme of electrification; the passage of the OBBBA, which acted as a 'clearing event' for US developers; and falling interest rates (since sustainable energy investments are typically more interest rate-sensitive than fossil fuel alternatives). Since repositioning seven years ago, the fund has delivered **a return in excess of its investment universe, based on an equal-weighted average calculation.**

As of 12/31/2025	YTD	1 Year	3 Years	5 Years	10 Years
GAAEX	26.65%	26.65%	2.91%	0.63%	7.78%
MSCI World Index NR	21.09%	21.09%	21.14%	21.14%	12.16%

All returns after 1 year annualized.

Inception 03.31.2006 Expense ratio* 1.10% (net); 1.76% (gross)

Performance data quoted represents past performance; past performance does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance of the Fund may be lower or higher than the performance quoted. Performance data current to the most recent month end may be obtained by visiting www.gafunds.com or calling 800-915-6566.

OUTLOOK FOR 2026

Looking ahead to 2026 and beyond, we expect that access to power, underlying economics and security of supply will continue to be the most important considerations for governments as the power crunch ensues. The decarbonization theme of the early 2020s remains relevant, but investor attention today is more focused on the secular theme of **electrification**. The International Energy Agency (IEA) expects global power demand growth of 3.7% in 2026 (twice the rate of global energy demand growth and well above the 2015-2023 average of 2.6% per annum), driven by rising industrial activity and accelerating demand from AI and data centers. China and India will account for 60% of the growth in 2026, while US demand will grow at twice its historic pace.

In the United States, AI and data centers are expected to grow from around 4-5% of US power demand to about 12% by 2030. The inflection is significant; the longer-term outlook for US annual incremental power has increased by almost 8x since 2021, according to NextEra Energy. Significant grid upgrades, a record interconnection backlog and shortages of products and skilled workers will keep this market very tight, benefiting equipment manufacturers and contractors. With new nuclear unlikely before the mid-2030s and gas turbines facing cost inflation and wait times, we expect renewables plus storage to offer the fastest and cheapest route to solve the power shortage. These time and costs advantages likely get better beyond 2026 as battery costs fall and gas turbine cost inflation affects the relative economics.

For China, we expect continued further growth as policy support for renewables, grids, storage and electrification remains strong (including under the emerging 15th Five-Year Plan, 2026-30). In Europe, little change in approach is expected.

Electric vehicle sales are likely to grow by nearly 4 million to 25 million, and EV penetration will continue to rise (albeit at a more moderate pace) as purchase tax credits and scrappage and trade-in schemes are cancelled or paused in China and the US. EV penetration will still increase, reaching 45% in 2030. Globally, battery prices should fall below $100/kWh in 2026 (a milestone widely seen as enabling cost parity with internal combustion engines) and continue on a journey to $70/kWh by 2030, thereby making EVs cheaper to buy, cheaper to run and cheaper to maintain.

Solar will see muted growth in 2026, with installations at about 700GW, as China transitions to a market-based power-pricing system and anti-involution efforts raise solar module prices. Pockets of growth will come from the expansion of Indian manufacturing, industrial development in the Middle East, normalization of solar module inventory in the United States, and grid reinforcement in Europe. Global wind installations drop to around 130 GW, with strong contributions from India, Europe, and parts of South-East Asia, offset by a Chinese slowdown. Faster permitting and raw material cost deflation should see installations around 200 GW by 2030, with China being around 60% of the market.

Investment in the **global power grid** (at around $520bn in 2026) appears to have entered a period of structurally higher growth, but it still falls below the level needed to connect new renewables, unblock interconnect queues, and meet the level of forecast electricity demand growth. A further 18 million kilometers of grid needs to be built by 2030 (expanding the existing network by around 20%) to keep pace. Put simply, the grid needs to be larger, smarter and more resilient to enable the energy transition to continue at pace.

Further interest rate cuts will lower consumer and project financing costs and help drive investment into the clean energy sector, likely reaching $2.5trn in 2026. Together with growing AI and data center demand, bringing higher renewable power prices, stricter energy efficiency requirements, massive grid upgrade programs and the implicit operating leverage within our manufacturer investments, we believe that confidence in portfolio earnings will continue to improve, and confidence will increase in the **structural growth offered by the energy transition.**

The consensus-derived earnings per share growth outlook for the fund (12.7% per annum for 2024-2027E) sits at a premium to the MSCI World index (11.5%pa). We do not think that the 12% one-year forward P/E discount of the fund reflects this earnings scenario, and if valuations do not improve, we would expect to see **high levels of M&A activity in the sector.**

As such, investor interest in sustainable energy equities should continue to improve as energy security grows in importance and individual, social and government pressure for consumers to become more energy efficient increases. We believe that the Guinness Atkinson Alternative Energy portfolio of 30 broadly equally weighted positions, chosen from our universe of around 300 companies, provides concentrated exposure to the theme at attractive valuation levels that are especially attractive relative to consensus earnings growth expectations.

Key themes in the Guinness Atkinson Alternative Energy Fund

	Theme	Example holdings	Weighting (%)
1	Electrification of the energy mix	Eaton, legrand	25.0%
2	Building and Industrial efficiency	Trane Technologies, Carlisle	14.4%
3	Modernising the power grid	Itron, Hubbell	10.6%
4	Rise of the electric vehicle and auto efficiency	LG Chem, Aptiv	11.7%
5	Power semiconductors	NXP, Infineon	8.9%
6	Wind & solar: equipment manufacturing	Vestas, First Solar	10.8%
7	Low carbon power generation: regulated producers	Iberdrola, NextEra Energy	9.1%
8	Low carbon power generation: independent producers	龙源电力 Longyuan Power, Ormat	8.0%
9	Other (inc cash)		1.5%

Source: Guinness Atkinson December 31, 2025

SUSTAINABLE ENERGY POLICY, INVESTMENT AND ECONOMICS

Energy transition policy in 2025 has been increasingly shaped by energy security, affordability and industrial competitiveness, against a backdrop of rising power demand. Policy approaches have diverged across regions: the United States has seen a reduction in federal support for some low-carbon energy technologies but has boosted others; China has continued to consolidate its structural advantages in clean-energy deployment and manufacturing; and Europe has maintained broadly supportive policies while seeking to strengthen industrial resilience.

Leading into 2025, in the **United States** President Trump's second term in office loomed large over the clean energy sector. Indeed, many of the executive orders from January 20th 2025, the first day of his new term, related to the energy sector. Some were specific to the fossil fuel industry, while others reflected the broader need for greater access to cheap energy to satisfy estimates of growing demand. Specifically in the realm of energy transition, Trump ordered a withdrawal from the Paris Agreement, a revocation of President Biden's 2021 electric vehicle targets and a suspension of new federal offshore wind leasing. However, it was also clear coming into 2025 that surging US electricity demand (due to the growth of artificial intelligence querying and data centers, as well as the broader trend of electrification) was a critical issue. It was imperative for Trump to deal with this if he wanted to win the 'AI arms race', requiring him to oversee significant grid upgrades and near-term growth in both renewable and natural gas-based power generation.

In the event, the budget reconciliation bill of May 2025 initially proposed fewer changes to President Biden's Inflation Reduction Act (IRA) than expected following President Trump's election. However, amendments by the House of Representatives in late May reduced the value of IRA credits, raising approximately $570bn. The resulting One Big Beautiful Bill Act ("OBBBA") eliminated electric vehicle and certain residential solar tax credits and accelerated the phase-out of utility-scale solar and wind ITC and PTC tax credits. Subsequent clarifications issued in August 2025 materially improved the outlook for developers by extending the time periods over which projects can qualify for these remaining production tax credits. Separately, manufacturing tax credits for battery and solar equipment were retained through 2032 (beyond prior expectations), while wind-related manufacturing credits remain scheduled to end in 2027.

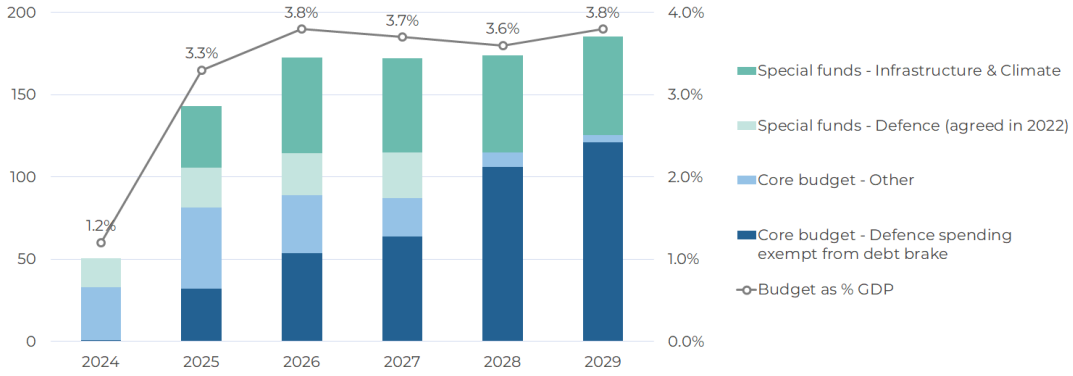
While the post-OBBBA policy environment is less favorable for clean energy than the IRA, its passing is providing project developers with the certainty needed to plan and proceed. Our dialogue with equipment manufacturers and developers indicates that the planning scenario for many following the Trump election was for a full repeal of the IRA and that little activity would occur while the bill was under consideration. With this hurdle now cleared, we have seen a resumption and acceleration of activity in the US, as the country's power crisis becomes the dominant issue.

China continued to reap benefits in 2025 from decades of investment in sustainable energy technologies, extending its dominance across the clean-tech value chain. Independent tracking suggests China produced 80-85% of all solar modules in 2025, around 70% of all wind turbines and around 70% of all battery electric vehicles in 2025. In the second half of the year, China pursued anti-involution efforts to remove excess manufacturing capacity, eradicate aggressive pricing and improve profitability for manufacturers, thereby improving the country's competitive positioning.

Power demand growth in China is thought to have remained robust in 2025, growing by around 5%, though growth has moderated since 2024 (+6.8% year-on-year). China's service sector has driven the growth, with expanding heating and cooling, EV charging, data centers and 5G networks all important contributors. By contrast, power demand growth in the industrial sector has been more muted. The overall level of growth keeps pressure on grid build-out and system flexibility. Looking into 2026, we expect continued policy support (including under the emerging 15th Five-Year Plan, 2026-30) for renewables, grids, storage and electrification, while coal remains a balancing item: new coal approvals have slowed versus the 2022–23 peak, but commissioning of new coal plants is still elevated.

European policy has been supportive of the energy transition this year. February saw the European Commission introduce the Clean Industrial Deal, a policy aimed at boosting the EU's clean manufacturing sector and industrial competitiveness by adding 100GW of renewable energy capacity annually until 2030 and making €100 billion available to support energy-intensive industries such as steel, metals, and chemicals. The deal also proposes streamlining bureaucratic processes, increasing European Investment Bank-backed guarantees for renewable energy projects, and supporting power grid manufacturers. In addition, Germany's debt brake reform (Feb'25), unlocks approximately €1 trillion in additional investment into defense, infrastructure and energy transition projects over the next decade. Importantly, the case for renewables investment in Europe has not been shaken by the Iberian blackout in April 2025, with the cause believed to be poor load control and frequency management, rather than the high share of solar (55%) deployed at the time.

Germany net investment (€' bn)



Source: Federal Ministry of Finance, Deutsche Bank, Guinness Atkinson, 2025

Held in November and marking the tenth anniversary of the Paris Agreement, **COP30** delivered incremental progress but fell short of the step-change in ambition needed to realign global emissions with a 1.5°C pathway. While the 1.5°C goal was reaffirmed, updated nationally determined contributions still imply warming well above 2°C, highlighting the gap between ambition and action. The summit made modest advances in areas such as adaptation finance and frameworks for a just

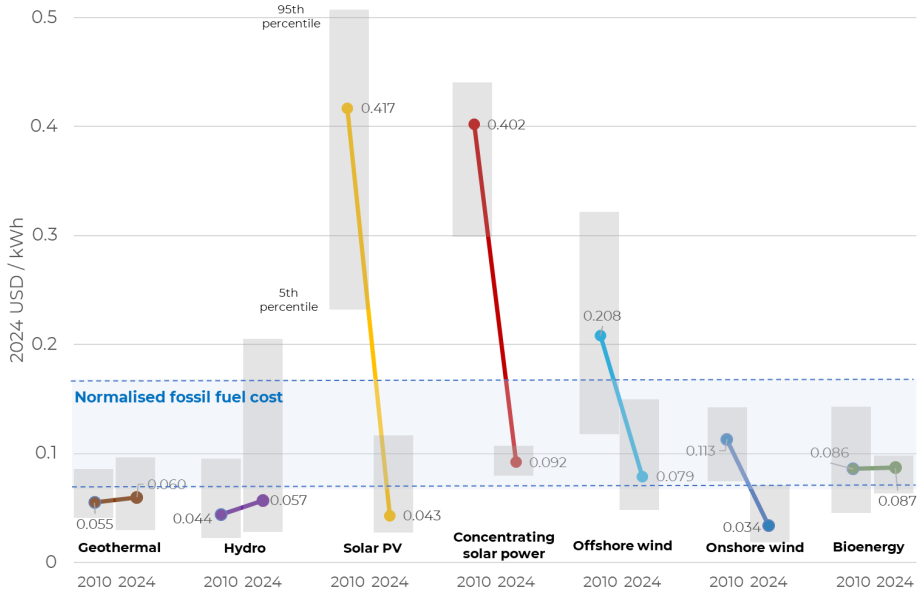
transition. There was also a renewed push to triple renewable capacity and double energy efficiency by 2030, alongside sector-specific initiatives spanning grids, sustainable fuels and transition investment.

The **broader macro backdrop** in 2025 proved to be reasonably supportive. In the US, the Federal Reserve cut rates three times, bringing the federal funds rate down to 3.50-3.75% and the generic US government ten-year Treasury closed the year at 4.1% (down around 50bps over the year). Looking ahead into 2026, a further two interest cuts are expected, something no doubt President Trump will be pushing the Fed hard on in the run-up to the November mid-term elections. Interest rates also fell in Europe in 2025 (the main European Central Bank deposit rate was down by 75bps to 2.50%), as inflation appeared to be better under control.

Overall, **global investment in clean technologies** grew and is likely to have hit nearly $2.2trn in 2025 according to the IEA, up by around 10% versus 2024 and twice the spend on coal, oil and gas in the year. Globally, spending on low-emission power generation has almost doubled over the past five years, led by solar PV (photovoltaic). Investment likely increases to $2.5trn (an increase of over 10%) in 2026.

Research from the International Renewable Energy Agency (IRENA) in 2025 supports the view that renewable electricity is the cheapest form of new electricity supply in most situations. According to their levelized cost of electricity (LCOE) estimates, the cost of wind and solar projects commissioned in 2024 (most recent data) ranged from $0.03-0.11/kWh, well below the fossil fuel cost range of $0.08-0.17/kWh. The LCOE of solar and wind remained broadly unchanged versus 2024 data, as the impacts of higher interest rates, plus the 2022/23 inflation cycle, were offset by greater economies of scale. These technologies are now competitive with the cheapest new fossil-fuel generation, which also produces power at roughly $0.08/ kWh, although inflation in gas turbine costs probably biases these estimates higher for projects commissioned in 2025 and 2026.

Global LCOE of newly commissioned utility-scale renewable power generation technologies (2010-2024)



Source: IRENA; Guinness Atkinson, August 2025, percentile ranges from 2024 or 2023 if data if not available

THE ELECTRIFICATION OF ENERGY DEMAND

The global economy is in the early stages of a secular energy transition, marked by rapid growth in renewable and low-carbon energy sources and the electrification of global energy demand. The electrification of the world energy system is driving substantial upward revisions to power demand, and we expect annual growth of around 4% per year from 2025 to 2040, meaning that electricity will ultimately account for 43% of total final energy consumption. The scale of this demand growth, at nearly 90EJ (Exajoule) or nearly the size of current global power generation capacity, poses considerable challenges for governments and countries, many of which have historically planned for stagnant or only modestly rising demand.

The drivers of this electrification trend are broad and include:

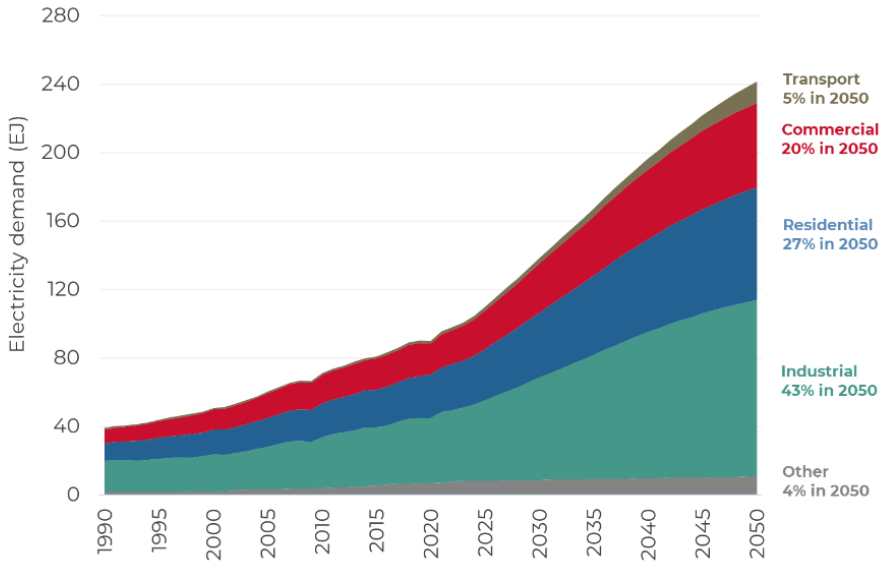
- The electrification of heating and cooling in buildings and of manufacturing processes in industry
- The electrification of transportation
- Surging electricity demand from AI and data centers (especially in the United States)

In the near term, the IEA expects global power demand to rise by 3.7% in 2026, well above the 2.6% average annual growth seen between 2015-2023. Growth is driven by rising industrial activity, continued electrification, expanding use of appliances and air conditioning, and accelerating demand from data centers, with heatwaves adding further pressure in many regions. As a result, electricity demand is expected to rise at more than twice the rate of total energy demand in 2026, highlighting the secular growth of electricity demand.

Regionally, China and India remain dominant, together accounting for 60% of global demand growth through 2026. China's consumption is expected to rise 5.7% in 2026, while India grows 6.6% over the same period. In the United States, rapid data center expansion drives above-trend demand growth of 2.3% in 2025 and 2.2% in 2026, more than twice the pace of the past decade. The European Union continues a modest recovery, with demand rising 1.1% in 2025 and 1.5% in 2026, as the industrial sector stabilizes after earlier declines. Across all major regions, electrification and digitalization remain the structural forces underpinning a stronger global power-demand trajectory.

Global electricity consumption (1990-2050E)

Showing % of final demand in 2050



Source: IEA, Guinness Atkinson estimates, January 2026

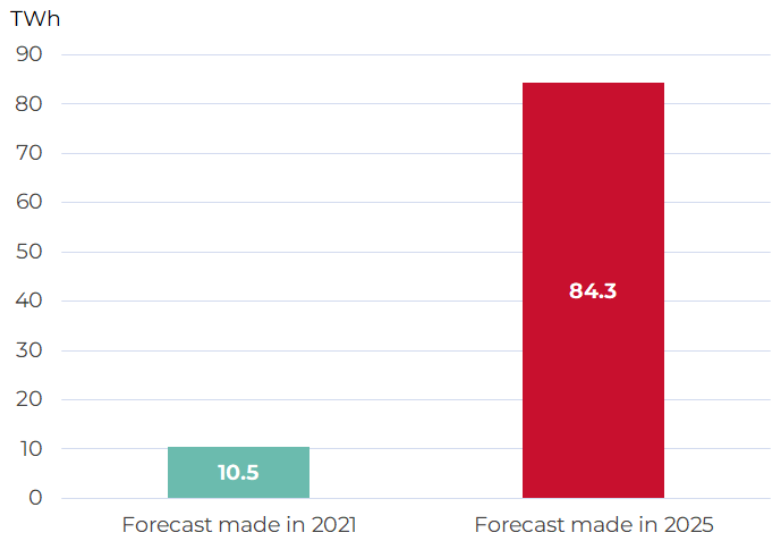
Data centers: putting near-term pressure on power markets, especially in the US

The build-out of AI infrastructure and data centers requires vast amounts of electricity and is causing a particular near-term issue in the United States. AI data centers run continuously and are growing in scale and complexity; in 2025 alone, the largest hyperscalers are expected to spend $350bn on AI capex. While forecasting demand growth is challenging due to rapid advances in both hardware efficiency and the scale of AI workloads, we see data centers growing from 4-5% of US power demand to about 12% by 2030, largely driven by AI servers, which are 3-5x more energy intensive than traditional servers.

AI demand is also being compounded by the onshoring of manufacturing and the wider electrification of transport, buildings and industry. Investment in new US manufacturing facilities has surged 184% since 2020, driven by semiconductors, batteries, and advanced materials, with the CHIPS Act and IRA spurring over $500 billion in private investment since 2021.

Looking longer term, the outlook for annual power demand growth up to 2040 in the US has increased by almost 8x since 2021 (according to Nextera Energy). To meet this demand growth and reverse a trend of stagnant growth and improved efficiency, the US must rapidly expand generation capacity and address emerging supply constraints.

Annual increase in US electricity demand to 2040
(as forecasted by NextEra Energy)



Source: NextEra, January 2026

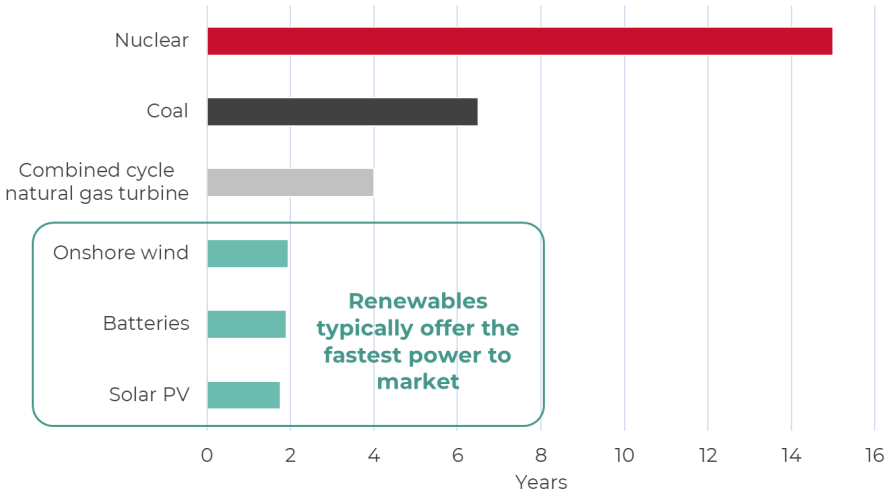
As laid out by NextEra, the US's largest electricity provider, the US needs to increase investment in almost all forms of generation. In the short term, given their speed to market, flexibility and cost advantages, a combination of renewables and storage is best positioned to deliver new power.

- **Renewables and storage**: existing and well-developed supply chains support rapid development, as does the availability of battery equipment. Storage projects can also be built on existing sites and connected to existing grids, and at the same time, battery costs have fallen sharply as the technology has matured and scaled.

- **Natural Gas:** longer lead times, cost inflation, and underdeveloped supply chains mean that new or unplanned natural gas projects cannot meet all of the near-term demand, and in the long term, it is a more expensive solution. However, given the rise of intermittent renewables, natural gas will play an important role in providing baseload generation.
- **Nuclear**: after decades of underinvestment, supply chains need to be rebuilt, and technology developed before nuclear can contribute meaningfully to the generation mix. Plans to restart retired nuclear reactors are not expected to add significant generation until closer to 2030. However, timelines remain uncertain, with potential risks around regulatory approvals, financing, and construction delays.

NextEra see "firmed" generation (intermittent renewables backed by storage) as having the lowest levelized cost of generation in 2030. The company reports an estimated cost of $25-$50/megawatt-hour (MWh) for new onshore wind (including storage) and $35-$75/MWh for new solar (including storage). This is considerably cheaper than a new natural gas combined cycle at $85-$115/MWh and a small modular reactor (in 2035) at $130-$150/MWh.

Average US power plant development timeline (from concept to operation)



Source: NextEra, August 2025

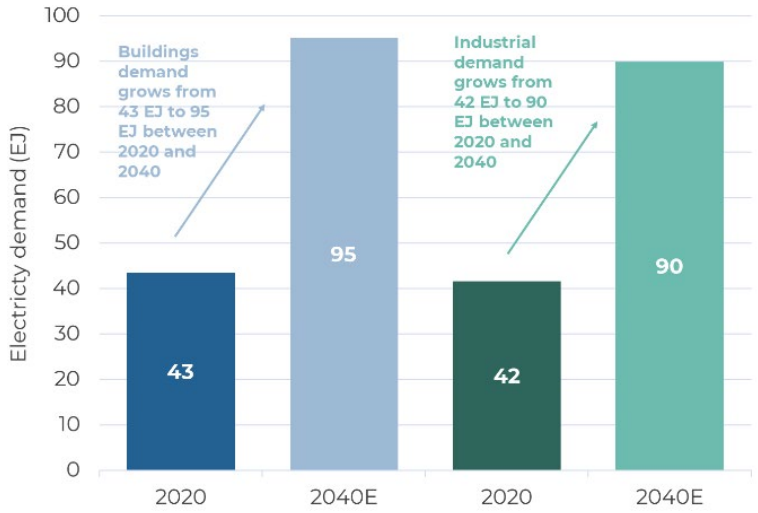
Despite the urgent need for more electricity, the US has found it increasingly difficult to bring new generation online. Although renewables represent more than 90% of the interconnection queue, an outdated interconnect process means that wait times have grown 70% in the last decade, with key markets seeing wait times of over 7 years. In practice, much of this queue won't translate into real projects, as it doesn't take into account grid constraints such as the availability of power equipment and turbines and includes speculative applications from developers looking to reserve places on the grid.

Meeting surging electricity demand growth is a key issue for the administration, and the US will need to see sustained investment in new generation assets, both renewable and gas, to avoid tightening reserve margins and rising system stress. Bloomberg New Energy Finance (BNEF) forecasts total U.S. clean energy build to remain at a sustained high level between 2026 to 2028, with annual additions of around 65-70 GW. The passing of the OBBBA in July 2025 is a meaningful reset for developers, offering both headwinds and clarity. While the legislation pushes forward the expiry of renewable tax credits (48E, 45Y) to end-2027, it still allows developers to safe-harbor projects through 2030 under certain conditions, restoring medium-term visibility and enabling developers to resume or restart investment. We believe this can meaningfully support the re-acceleration of clean energy development as the US grapples with the need to deploy new generation quickly and at scale.

Buildings & industry: electrifying the largest consumers of energy

Buildings and industry are two of the largest consumers of energy, together accounting for almost 70% of final energy demand in 2024. Given the vast existing stock of homes, commercial buildings and industrial facilities, the scope for electrification is enormous, as is the potential for efficiency improvements that can moderate future demand growth. It's worth noting that in our base-case scenario, we assume that significant energy efficiency gains reduce energy demand growth to around 1% per year, half the historic rate of nearly 2% per year. Given their size, the buildings and industrial sectors will need to account for a substantial share of these efficiency gains.

Electricity consumption in buildings and industry: 2020 vs 2040 (Exajoules)



Source: IEA, Guinness Atkinson, January 2026

Buildings

The global buildings sector, including both residential and commercial properties, accounts for around 28% of final energy demand and demand is set to grow further as a growing population drives new housing needs, economic expansion adds commercial floor space, and rising incomes drive demand for heating, cooling, and household appliances.

We see electricity demand increasing by about 2.2x by 2040, growing at an average of 4% per annum (pa), driven by:

- **Heat pumps**: over the long term, demand for heat pumps stems from their superior efficiency (3-5x) versus gas boilers. Despite an attractive total cost of ownership profile, near-term heat pump adoption is hindered by high upfront costs.
- **Heating and Cooling:** with rising household incomes and increasing global temperatures, demand for air conditioning and other forms of electric heating & cooling is set to accelerate sharply. BNEF expects residential air conditioning demand to double by 2050.
- **Digitalization:** buildings will become more digitalized, with smart controls allowing for power loads to align with generation.

In the near term, progress continues to be made in the global **buildings sector** to improve efficiency and incentivize investment. As of 2025, an estimated 60% of new buildings are covered by building energy codes, mandating minimum efficiency requirements. At the same time, spending on efficiency in buildings is thought to have risen by over 20% since 2019. Appliances remain a largely regulation-led efficiency story, and the IEA highlights that standards and labeling schemes for products such as air conditioners and refrigerators were strengthened in several countries in 2025, reflecting the need to manage rapidly rising cooling demand, which has grown by over 4% per year since 2000, the fastest of any buildings-related end use. The IEA estimates that 90% of energy use by air conditioners and refrigerators is now covered by standards, pointing to the progress being made.

Industry

The industrial sector is the largest single consumer of energy globally, accounting for around 40% of final energy demand, and demand will continue to rise as populations expand and economies grow. Today, fossil fuels supply close to 60% of the energy used in emissions-intensive industries such as aluminium, cement, steel and chemicals, highlighting the scale of the electrification opportunity. In these hard-to-abate sectors, large-scale policy frameworks will be essential to displace fossil fuels, with a combination of strong incentives and tighter regulation required to tilt the economics of industrial processes toward cleaner forms of energy.

Within the industry, the electrification of heat represents the most significant driver of future electricity demand, supported by the growing automation of production processes and broader uptake of electric motor systems. Tangible progress is already underway across several key technologies:

- **Industrial motor systems**, including pumps, fans, compressors and drives, are shifting toward higher-efficiency electrified solutions. Industrial electric motor systems account for about 60% of global industrial electricity demand, with demand growing about 60% between 2005 and 2023. The process of 'electrifying labor' continues.
- **Electric arc furnaces** now dominate new steelmaking capacity.
- **Electric boilers** are increasingly replacing coal and gas-fired alternatives across a range of industrial sites.

We expect these trends to result in industrial electricity demand growing by just over 4% per annum, rising from approximately 42 exajoules (EJ) in 2020 to around 90 EJ by 2040. A key uncertainty remains the industry's ability to decarbonize its hard-to-abate sectors and policy support to incentivize long-term efficiency investments. In 2025, efficiency investment increased with the IEA citing a rise in China from $5bn in 2024 to $7bn in 2025, and an estimated 30% year-on-year increase in the European Union. While electricity demand growth is a key structural driver, policy support for efficiency investment in industry remains uneven. Currently, only around one-third of countries globally have efficiency standards for industrial motors, despite electricity demand from motors having risen by around 60% over the past two decades. Ultimately, we expect the attractive cost-reduction economics to drive long-term investment into the sector. As the IEA demonstrates, energy management systems can reduce industrial energy costs by at least 10% in the early years of implementation, making a compelling argument for further adoption of technologies.

Transportation: falling battery costs make electrified transport more economic

The electrification of transport, led by the rapid adoption of electric vehicles (EVs), represents the final major driver of electricity demand growth. EV sales have expanded significantly over the past decade, from roughly 0.5m units in 2015 to 17.5m in 2024, yet the sector remains overwhelmingly reliant on fossil fuels. We expect an increase of over 50 times in the number of EVs on the road in 2040 versus 2020 levels, and that transportation's share of world electricity demand

will increase. In 2024, transport accounted for 28% of global final energy use but contributed only 2% of global electricity demand, highlighting the substantial runway for electrification ahead.

EV sales have continued to grow at a healthy pace, albeit slower than was expected a few years ago. We expect sales growth of 25% in 2025, with EVs making up one in every four cars sold and annual sales reaching about 22m. At a regional level, adoption rates vary, reflecting variations in relative economics and policy support.

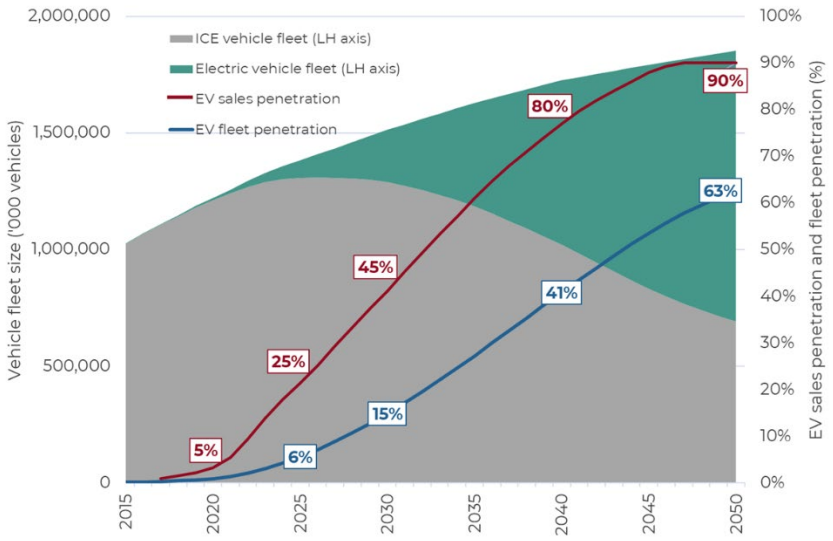
- **China:** China is the world's largest EV market, accounting for more than an estimated 60% of global sales in 2025. The country benefits from the lowest battery costs globally, now below the $100/kWh level (widely seen as enabling cost parity with internal combustion engines) and consistent policy support, which has helped drive EV penetration above 50% this year.

- **Europe:** EVs aren't at price parity yet, but high fuel prices mean that they are still competitive with internal combustion engine vehicles on a total cost of ownership basis (over 3-5 years) in some segments. As more stringent emissions standards are phased in and automakers roll out more affordable models, we expect EV penetration to improve from 20%-25%.

- **US:** The US remains the most challenging market in terms of relative economics. Consumers need bigger batteries, drive longer distances, and have access to cheap gasoline. Inconsistent policy support and the removal of consumer tax credits in 2025 also contribute to lagging penetration rates of about 10%.

In the long term, we believe that EV penetration will increase (reaching 45% by 2030 and over 80% by 2050) as falling battery costs improve affordability, and technology improvements enhance performance and safety.

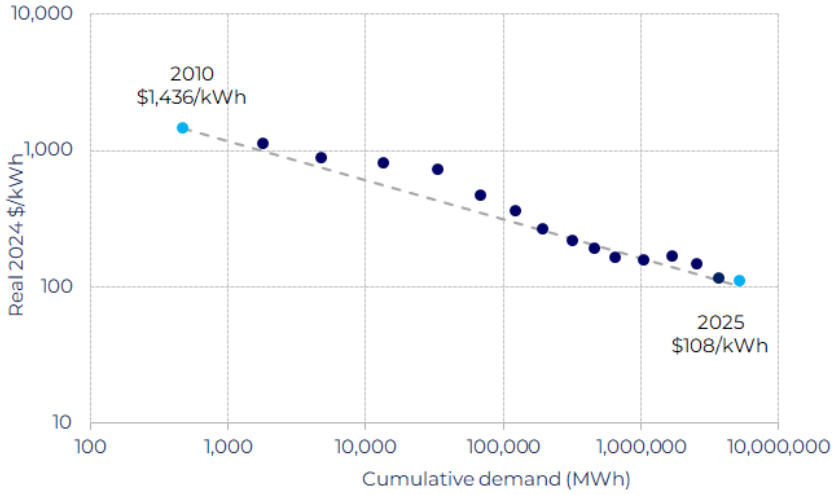
Global auto, Internal Combustion Engine (ICE) and EV population to 2050



Source: US DoE (actual), Guinness Atkinson (estimates) as of January 2026

A key pillar of our forecast for rising EV penetration is the continued decline in battery costs and the resulting improvement in EV relative economics. Battery prices (at $108/kWh in 2025) have already fallen by 93% since 2010 and are expected to fall below $100/kWh as early as 2026, a milestone widely seen as enabling cost parity with internal combustion engines. As the industry continues to scale and technology improves, battery costs are projected to decline even further, reaching around $70/kWh by 2030.

Cumulative demand for lithium-ion packs (MWh) vs. battery pack price ($/kWh)



Source: Bloomberg, Guinness Atkinson estimates, January 2026

In China, falling battery costs mean that over two-thirds of electric vehicles are cheaper than their internal combustion counterparts. In fact, electric cars have been cheaper in China, on average, than comparable combustion cars since 2023, and, as battery prices fall in other regions, we would expect to see a similar increase in penetration rates.

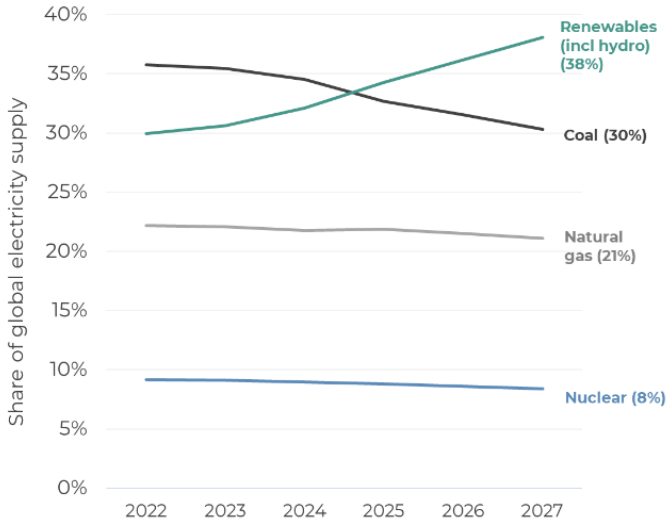
Looking ahead to 2026, we expect global EV penetration to continue to rise, albeit at a more moderate pace. China will remain the world's largest and most mature EV market, but growth is likely to moderate as purchase tax credits and scrappage/trade-in subsidy programs are either canceled or paused. On the EV supply side, government efforts to curb "irrational" price competition are likely to lead to lower sticker price deflation. The outlook in Europe is more robust, with EV sales expected to have grown by around 22% in 2025, reflecting a material rebound driven by stricter fleet emissions targets and renewed compliance activity by automakers, particularly in markets such as Germany, the UK and Spain. These regulatory factors are expected to remain supportive into 2026, underpinning continued growth. The outlook in the United States is more subdued. Following the removal of consumer EV tax credits and the likelihood of weaker federal fuel economy standards, EV adoption has slowed, with 2025 sales boosted temporarily by pull-forward demand ahead of incentive expiry. While a number of new model launches in 2026 should improve choice and affordability, these factors are unlikely to fully offset the loss of subsidies, leaving the US market broadly flat year-on-year.

RENEWABLE ENERGY SUPPLY AND GRIDS

Having considered electrification, the key driver of demand, we now turn to the drivers of renewable supply and consider solar, wind and the need for upgrading of the global power grid.

The relative economics of renewable power continue to improve and underpin their continued penetration of the global electricity mix. With 91% of utility-scale projects commissioned in 2024 producing electricity more cheaply than new fossil-fuel alternatives, renewables are now cost-competitive across most major markets. Their share of global capacity additions has risen accordingly, climbing from about 40% in 2010 to more than 90% in 2024.

Renewable share of electricity mix (2027 vs. 2022)



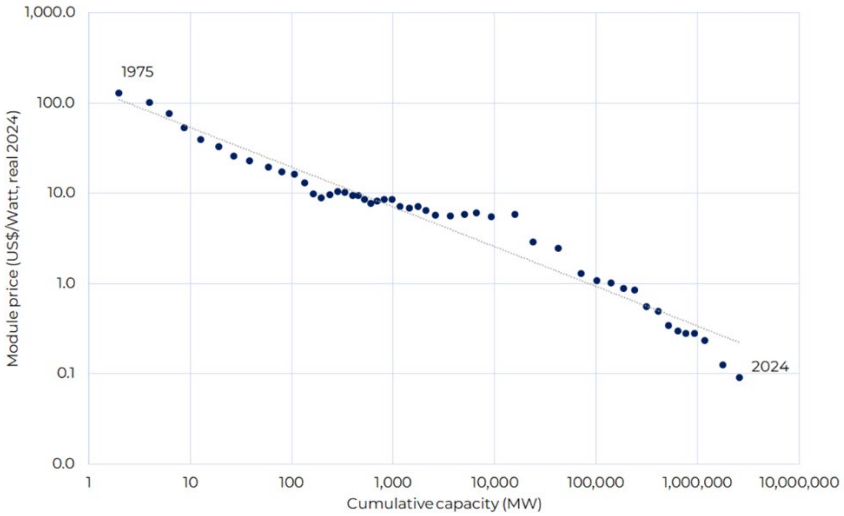
Source: IEA, IRENA, Guinness Atkinson estimates, January 2026

Solar: at the bottom end of the cost curve and growing rapidly

Solar has grown rapidly over the last decade, with annual installations rising more than tenfold. This expansion has undoubtedly been driven by a collapse in systems costs (down about 95% since 2010) and improvements in technology (solar module efficiency has improved 5x over recent decades). The decline in costs has resulted from large-scale manufacturing investments, particularly in China, and from the development of a global industrial supply chain that has enabled low-cost solar deployment at unprecedented volumes.

Solar's attractive economics, with average LCOEs of around $0.04/kWh, leave it at the bottom of the global power-generation cost curve, making it, more often than not, the cheapest source of new electricity. Beyond its cost advantage, solar also benefits from design simplicity and rapid build-out times and, when paired with increasingly affordable storage, offers a pathway to competitively priced, 'firmed' renewable power.

Solar module prices (1976 – 2024)



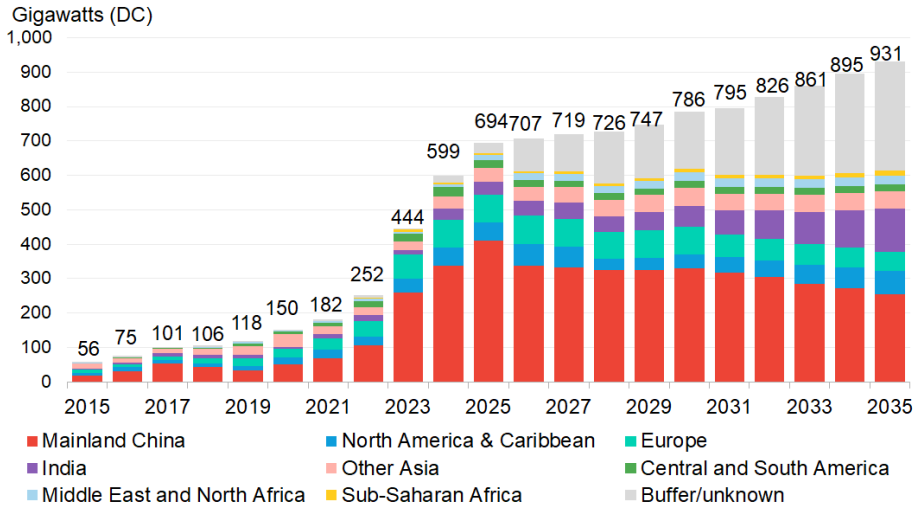
Source: BNEF, Maycock, Guinness Atkinson,, January 2026

Solar deployments are expected to have had another exceptionally strong year, with installations reaching almost 700 GW. As has been the case over the last five years, China has dominated, accounting for about 60% of global installations. In the US, significant political uncertainty has contributed to slower growth of about 5% and in Europe, grid connection bottlenecks and permitting delays have hampered growth. In other markets, India and the Middle East have emerged as key demand drivers, with both markets experiencing double-digit growth.

Looking ahead to 2026, growth is set to moderate slightly as China transitions from a fixed feed-in tariff system to a market-based power pricing system. While it's hard to know the exact impact of this transition, a step-down from the exceptional growth rates of the previous five years seems likely. India's auction pipeline and manufacturing expansion support a step-up in deployment, while the Middle East continues to scale multi-gigawatt programs linked to industrial development and fuel-diversion strategies. The US is positioned for a rebound as inventory normalizes and as project pipelines tied to corporate offtake and state-level mandates progress. Europe should see steadier expansion as grid reinforcement plans begin to alleviate connection delays.

In the long term, solar is likely to remain the fastest-growing source of renewable energy. We expect annual solar installations to grow in the medium-to-high single digits over the next decade, with much of the incremental growth coming from emerging markets, where electricity demand is accelerating and solar's cost advantage is most pronounced. Power markets such as India, the Middle East and South-East Asia remain undeveloped and continue to build project pipelines, pointing to their role in future demand growth.

Global solar: Annual installations (GW)

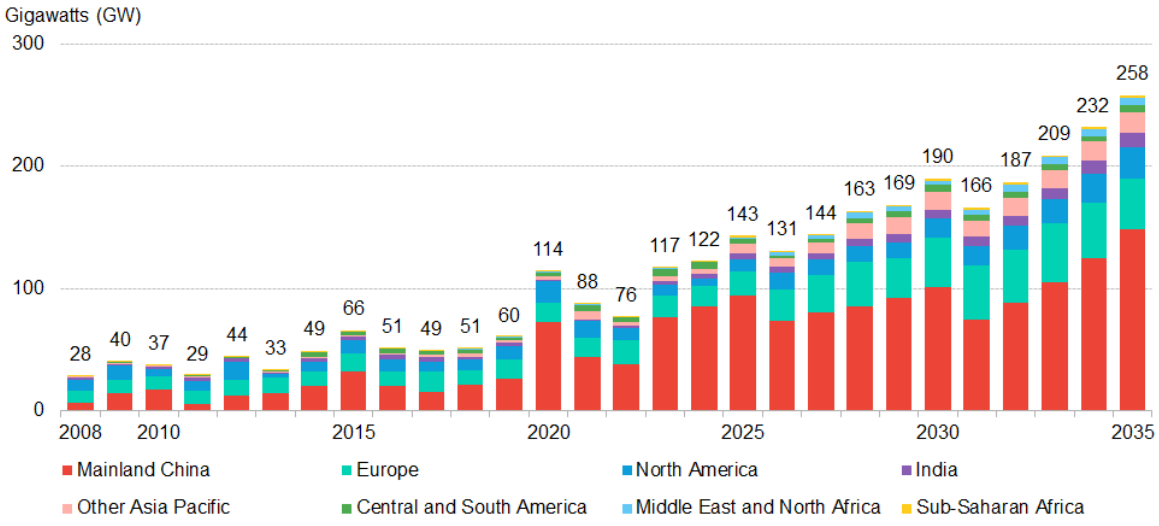


Source: BNEF, January 2026

Wind: record global installations in 2025 with China dominant

The wind sector has seen more moderate growth over the last decade, with installations almost doubling between 2015-2024. Over this period, larger turbines, higher capacity factors and improved offshore technologies have materially lowered costs and improved reliability, supporting continued demand growth. However, wind projects tend to be larger and more complex than solar; they are more capital intensive, have longer lead times, and can be more exposed to permitting delays and supply chain disruptions. As a result, the industry has grown more slowly than solar, despite having comparable LCOE profiles. Over the past five years, much of the industry's growth has been supported by the large-scale build out of capacity in mainland China, accounting for about 50% of the industry total installed base as of 2024. This is set to continue, with China adding 66% of annual global installations in 2025.

Global wind: annual installations GW



Source: BNEF, January 2026

Looking ahead to 2026, the outlook for global wind demand will largely depend on how China adjusts to its new market-based power regime. The country has replaced fixed feed-in tariffs with liberalized market trading, meaning that renewables are competing head-on with fossil fuels. While this will likely introduce short-term headwinds and lower expectations for installations in 2026, we are encouraged by the announcement of updated targets to install 120 GW of new capacity every year between now and 2030, including 15 GW of offshore capacity. Outside of China, the global wind market is increasingly diversifying with strong contributions from India, Europe and parts of South-East Asia. The offshore market is set for a step up in 2026, with project completions due across a range of markets such as the UK, Vietnam and France. In the longer term, we expect wind installations to grow at 6-7% per year through 2030, with the smaller offshore market growing at a higher rate of around 20%.

Power grids: a multi-year expansion, replacement and digitalization cycle ahead

The global power grid requires substantial and sustained investment to integrate an ever-growing pipeline of renewables and support the rising demands of an electrified world. Put simply, the grid needs to be larger, smarter and more resilient to enable the energy transition to continue at pace. Long-term growth drivers include:

- **Expansion:** The global grid must expand substantially to connect the large volumes of new renewable generation coming online, much of which is located far from major demand centers. This requires major investment in high-voltage transmission to link large solar and wind clusters, alongside substation upgrades and reinforcements that allow power to move efficiently across regions. An estimated 29 million kilometers of additional grid infrastructure is required to accommodate the build-out of renewables by 2050.

- **Replacement:** A major driver of grid investment is simply the need to replace ageing infrastructure. Years of under-investment, particularly in advanced economies, mean that almost 40% of the grid (30 million kilometers) will need to be refurbished by 2040. BNEF estimates that asset replacement accounts for around 41% of all global grid investment to 2050, creating a substantial, non-discretionary baseload of spending that persists regardless of the pace of the energy transition or the source of power generation.

- **Digitalization:** The integration of intermittent renewables and more dynamic demand means that the grid needs to be smarter and more responsive. Managing variable wind and solar output, two-way power flows, and increasingly dynamic demand requires digital tools that enhance visibility, flexibility and control. This is driving sustained investment in smart meters, advanced sensors, automation systems and real-time grid management software. Investment in digitalization allows operators to get more of the existing grid, helping to reduce the need for more physical investment.

- **Load growth:** The electrification of buildings, transport and industry is driving a clear rise in electricity consumption, but the more important effect is the increase in peak load. BNEF estimates that global peak demand will grow by 44% by 2035, significantly faster than overall electricity consumption (+26%). This matters because grids are built to meet peak requirements, not average use. The rapid build-out of data centers, which require large, non-interruptible loads, will add further pressure to already constrained local networks and support the need for substantial investment in distribution networks.

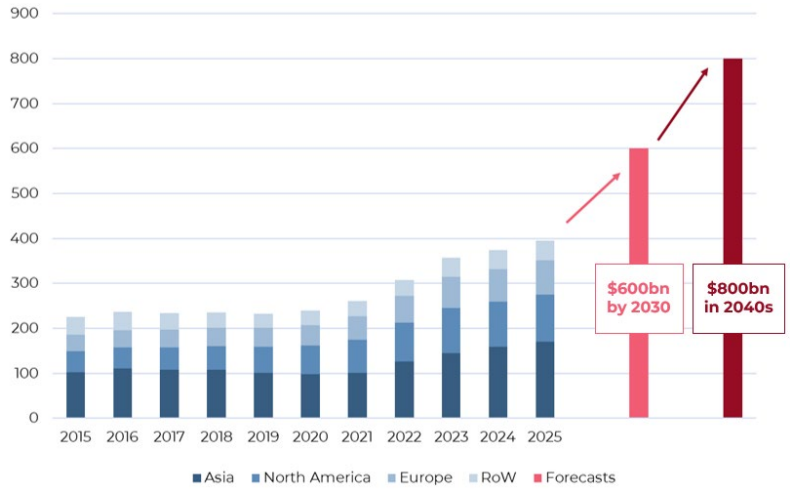
In terms of grid spending, distribution networks still account for the majority of spending (55%), but transmission investment is expanding far more quickly, reflecting the urgent need for high-voltage lines to connect renewable generation and reduce interconnection queues. The US leads with an expected $115 billion of investment in 2025, followed by the EU/UK and China, with all registering strong double-digit growth (Germany +33%, the UK +24%, China +15%).

Looking ahead, BNEF expects average global capex growth of 11% per year between 2025-2027, levels that are structurally higher than recent years. In the US, utilities companies have laid out multi-year investment plans in

response to data center demand, with five companies alone expected to spend $255 billion by 2029. In Europe, planned spending is set to grow from around $26 billion in 2024 to around $70 billion in 2028. China will continue to lead spending growth in Asia, with preliminary plans suggesting spending will grow 11% per year between 2022-2027.

While grid spending appears to have entered a period of structurally higher growth, it still falls below the spending level required to connect new renewables, unblock interconnect queues, and meet the level of forecast demand growth. Annual investment will need to reach over $600 billion per year by 2030 to put spending on track, growing further to average $800 billion per year through the 2040s.

Global power grid investment by region ($' bn)



Source: Rystad, IEA; September 2025

The Guinness Atkinson Alternative Energy Fund

The Guinness Atkinson Alternative Energy Fund delivered a return of 26.9% in 2025, outperforming the MSCI World Index, which finished the year up +21.1%. Within our portfolio, the top-contributing segments were electrical equipment and services, clean energy equipment and utilities/IPPs, while underperforming segments included certain energy efficiency and construction names. We are encouraged by the diversity and breadth of contribution within the portfolio, with several end markets providing positive contribution and seven of our top ten contributors being European.

Our **electrical equipment** companies all performed well, driven by an acceleration in global electrification activity, grid spending and exposure to the data center sub-sector. **Amphenol** shares were the single largest contributor for the year as quarterly results consistently beat expectations and forward earnings guidance was steadily increased. Amphenol's *"IT Datacom"* segment, which includes the data center and AI activities, was largely responsible for the growth improvements. **Legrand**, our fourth strongest contributor, also benefited from the data center theme, with data centers now representing 25% of sales at Legrand, following 22 acquisitions in the sub-sector since 2010. Legrand is now the most exposed European electrical company in our sustainable energy universe to the data center theme.

The second largest contributor was **SPIE**, which delivered upgraded guidance at its Capital Markets Day and benefited from higher German infrastructure spending. Also in the top five was **Prysmian**, which announced a number of significant new power cable contract awards (taking its backlog to a record level, estimated at Eur17bn)

and benefited from US steel tariffs as a result of its US domestic manufacturing activity. SPIE, Prysmian and Amphenol are all additions to the portfolio within the last 14 months.

Performance data quoted represents past performance; past performance does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance of the Fund may be lower or higher than the performance quoted. Performance data current to the most recent month end may be obtained by visiting www.gafunds.com or calling 800-915-6566.

Other strong subsectors were renewable power **generation** and **clean energy equipment**. While our generation companies saw only muted increases in cash returns and earnings forecasts over the year, there was increasing optimism over the value of electrical network assets and baseload power generation capacity. **Iberdrola** benefited from its large electrical network exposure, while Ormat benefited from improving sentiment towards geothermal power generation, with the company now extending geothermal power contracts at over $100/MWh.

After a generally weak first half, a number of **clean energy equipment** companies, including Vestas, Canadian Solar and First Solar, delivered well and ended up as top ten contributors for the year. Their strength reflects an improving cyclical outlook and hope that US clean energy equipment orders will exceed expectations in the short term as developers try to front-load orders ahead of expiring tax credits. Outside the US, China's anti-involution efforts to curb overcapacity across the solar supply chain, ease supply-chain competition and support pricing across the industry brought greater optimism for sector profitability. Strong performance also resulted from the fact that valuation and sentiment were particularly low in this sub-sector at the start of 2025.

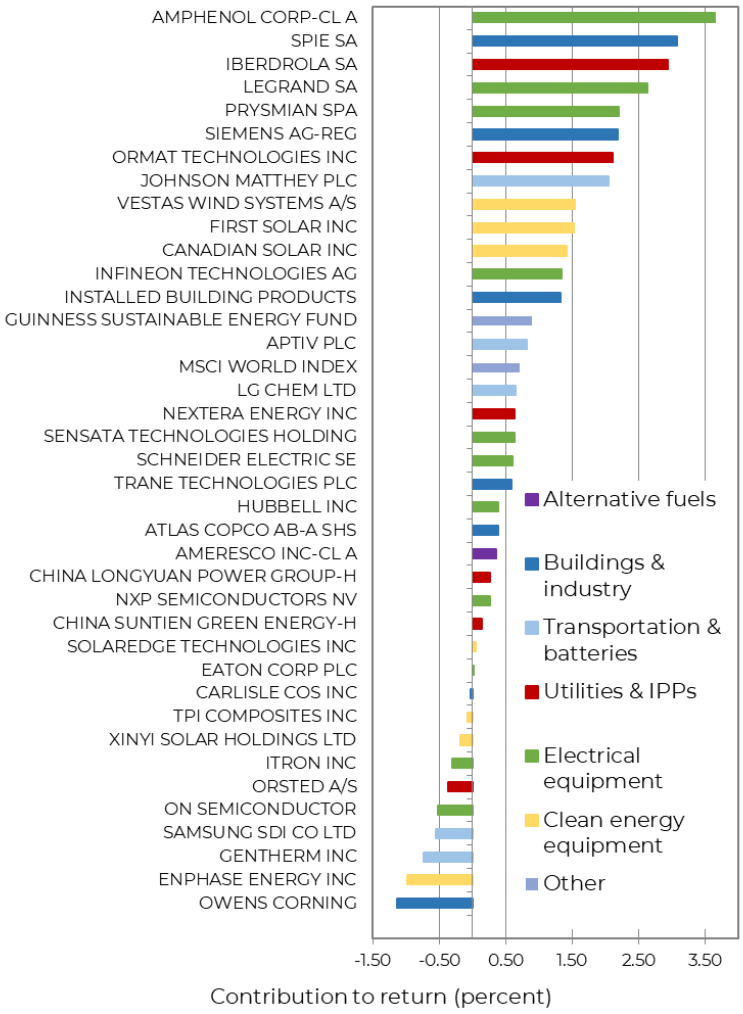
We also note the strong performance of **Johnson Matthey**, which performed well, having accepted a bid for its Catalyst Technologies division for £1.8bn from Honeywell, at an implied attractive valuation of 15x earnings before interest, taxes, and depreciation over the trailing twelve months (TTM EBITDA). Management plan to return about £1.4bn (60% of current market cap) to shareholders once the deal is closed in 1H 2026.

The more pressured parts of the portfolio also covered a range of end markets. Within **electrification,** we hold a number of companies that sell components into the EV supply chain and that also have exposure to the internal combustion engine (ICE) vehicle supply chain. EV penetration growth slowed further in 2025 (relative to start-of-year expectations) as EV launch schedules were delayed and margins were pressured due to increasing Chinese competition. **Gentherm** and **Samsung SDI** suffered from these factors, together with uncertainties around Trump's tariffs, and we exited both positions in the first half of the year. Auto sector weakness also impacted power semiconductor manufacturer **Onsemi,** with its shares weakening as expectations for the speed of recovery in its markets proved to be too optimistic.

Our exposure to the building sector, predominantly via efficiency and insulation companies, suffered as the outlook for US construction continued to remain weak. **Owens Corning** suffered due to weakness in the North America residential market, while Carlisle Companies saw a slowdown in non-residential spending, with project delays and cancellations causing management to lower organic growth guidance. Interest rate cuts in the second half of the year give hope that lower mortgage rates will drive greater housing market activity in 2026.

Lastly, shares in **Enphase** continued to be weak as the elimination of the Section 25D US solar residential tax credit started to bring lower demand for US customer-owned residential solar systems.

2025 individual stock contribution, in USD



Source: Bloomberg, Guinness Atkinson. Data as of 12.31.2025

The fund slightly underperformed the Guinness Atkinson sustainable energy universe (on an equally weighted basis) over the year, as positive subsector allocation was offset by weaker individual stock selection. We saw positive attribution from overweight positions in electrical equipment and solar equipment, and positive attribution from underweight positions in efficiency and EVs. These were both offset somewhat by negative attribution from our underweight positions in alternative fuels and batteries. Individual stock selection within Independent Power Producers (IPPs), utilities and efficiency helped to offset weaker stock selection across batteries, alternative fuels and solar equipment manufacturers.

The Guinness Atkinson Alternative Energy Fund was repositioned at the start of 2019, and over the last seven years, it has, on average, been correctly positioned (overweight or underweight) to all subsectors except wind equipment and IPPs. In terms of stock selection, our fundamental value-oriented approach has facilitated good stock selection within the efficiency, EV, IPP, utility and solar equipment subsectors, while stock selection has been negative within batteries, wind and other equipment manufacturers. Over the seven-year period, the Guinness Atkinson Alternative Energy Fund (post fees) has delivered a return that has been in excess of its investment universe, based on an equal-weighted average calculation.

Attribution of Guinness Atkinson Alternative Energy Fund versus the universe (2019-2025)

Subsector	Average weight			Indicative attribution	
	Universe	Fund	Relative	Sector allocation	Stock selection
Alternative Fuel	4.0%	0.2%	Underweight	Positive	Neutral
Efficiency	11.8%	14.9%	Overweight	Positive	Positive
Battery	13.8%	10.1%	Underweight	Positive	Negative
Electric Vehicles	19.2%	16.8%	Underweight	Positive	Positive
IPP	15.0%	12.8%	Underweight	Neutral	Positive
Utility	10.7%	8.0%	Underweight	Positive	Positive
Equipment - solar	8.0%	14.4%	Overweight	Positive	Positive
Equipment - wind	2.5%	6.6%	Overweight	Negative	Negative
Equipment - other	15.0%	16.3%	Overweight	Positive	Negative

Source: Guinness Atkinson estimates, Bloomberg, December 2025

THEMES AND FUND POSITIONING

The Guinness Atkinson Alternative Energy Fund is positioned to benefit from numerous themes within the broader secular trend of the energy transition. We highlight eight such themes below:

	Theme	Example holdings	Weighting (%)
1	Electrification of the energy mix	Eaton, legrand	25.0%
2	Building and Industrial efficiency	Trane Technologies, Carlisle	14.4%
3	Modernising the power grid	Itron, Hubbell	10.6%
4	Rise of the electric vehicle and auto efficiency	LG Chem, Aptiv	11.7%
5	Power semiconductors	NXP, Infineon	8.9%
6	Wind & solar: equipment manufacturing	Vestas, First Solar	10.8%
7	Low carbon power generation: regulated producers	Iberdrola, NextEra Energy	9.1%
8	Low carbon power generation: independent producers	Longyuan Power, Ormat	8.0%
9	Other (inc cash)		1.5%

Source: Guinness Atkinson. Data as of 12.31.2025

- The **electrification of the energy mix** is the key secular trend of the energy transition, with electricity growing around 4% per annum (increasingly displacing fossil fuels), having grown at 2.9%pa in the 2010-2025 period. This requires nearly doubling the existing global electricity generation fleet by 2040, while offsetting any declines in the existing fleet. While we see high growth rates in AI and data center electricity demand, we note that the electrification trend is broader, encompassing industry, buildings, and transportation.

- As part of this, the **global power grid needs to be modernized**. Much of the Western world's power grid is 40-50 years old, and over half of the US grid transformers are over 30 years old. By 2040, we see estimates

that over 50 million km of new grids and 30 million km of refurbished grids will be needed, equivalent to a doubling of the global power grid today.

- The rise of **the electric vehicle** should see transportation's share of electricity demand increase rapidly. China is leading the race with more than 50% of new car sales being EVs because the average battery EV is now cheaper than the average ICE vehicle. Further reductions in the cost of battery manufacturing will support the transition towards EVs, and **power semiconductor** demand will also rise.

- Bottom-of-the-cycle conditions in **clean energy equipment manufacturing** will improve as demand for wind and solar power persists. Renewables represented over 90% of new power capacity installed globally in 2024, and renewables remain attractive either due to the speed of delivery or the cost of supply relative to fossil fuels.

- Our **low-carbon generation companies** are well placed to benefit from rising electricity demand expectations and rising electricity prices. Urgency around electricity demand brings substantial opportunities for these companies to invest in either new renewable supply or substantial grid upgrades at attractive regulated or semi-regulated rates of return.

- Lastly, our **building and industrial efficiency-oriented** companies will be key beneficiaries of electrification. In the near term, falling US interest rates are likely to help boost lagging home starts, but longer-term policy commitments and higher electricity prices are leading governments to enact greater efficiency regulations, boosting the payback on efficiency upgrade projects that our companies are exposed to.

The cash return of the fund's holdings (a measure of real economic return on capital employed) has moved higher over 2024 and 2025 and has now reached 11%, for the median holding at the end of December 2025. This is the result of improvements in the cash returns of various existing investee companies, plus some high grading of the portfolio. Looking back over the fund's history, cash returns have now reached new highs and, for the first time since 2019, they are at a premium to the median cash return of the MSCI World index.

The companies in our portfolio at the end of 2024 sold products and services that helped to displace 919 tonnes of CO_2e (per $1m of portfolio assets) compared to the continued use of incumbent fossil fuel technologies. In 2024, the companies in the fund (on a 100% ownership basis) grew their carbon dioxide emissions avoided by 9%, thereby delivering a five-year annualized rate of 13%pa. Our analysis of business exposure suggests that the portfolio at the end of July 2025 had over 70% of green revenues (Guinness Atkinson estimate) from clean energy, very similar to the levels estimated for our portfolio from 2019.

Estimated annualized carbon cost vs carbon displaced (tonnes) per US$1m of AUM by sector

Source: Guinness Atkinson estimates; data as of 12.31.2024

Conclusion

The energy transition is accelerating. Increasing global electricity demand, a better-than-expected resolution to US policy and supportive policy elsewhere in the world provide a constructive backdrop for the companies we own. Portfolio earnings growth in 2026 is forecast to be nearly 14%, which is ahead of MSCI World at 11%. Despite this, the fund trades at a P/E discount to the MSCI World.

We believe that the Guinness Atkinson Alternative Energy portfolio of 30 broadly equally weighted positions, chosen from our universe of around 300 companies, provides concentrated exposure to a multi-decade theme at attractive valuation levels.

Jonathan Waghorn, Will Riley, Jamie Melrose, Jordan Patel and Charlie Hogg

January 2026

* The Advisor has contractually agreed to reduce its fees and/or pay Fund expenses (excluding Acquired Fund Fees and Expenses, interest, taxes, dividends on short positions and extraordinary expenses) in order to limit the Fund's Total Annual Operating Expenses to 1.10% through June 30, 2028. To the extent that the Advisor absorbs expenses to satisfy this cap, it may recoup a portion or all of such amounts absorbed at any time within three fiscal years after the fiscal year in which such amounts were waived or absorbed, subject to the expense cap in place at the time recoupment is sought, which cannot exceed the expense cap at the time of the waiver. The expense limitation agreement may be terminated by the Board of the Fund at any time without penalty upon 60 days' notice.

Top 10 Fund Holdings as of 12/31/25:

1.	Iberdrola SA	4.91%
2.	Amphenol Corp	4.58%
3.	Legrand SA	4.34%
4.	Nextera Energy Inc	4.30%
5.	Schneider Electric SE	4.30%
6.	Hubbell Inc	4.29%
7.	Siemens AG	4.27%
8.	First Solar Inc	4.00%
9.	Trane Technologies PLC	3.93%
10.	Eaton Corp PLC	3.91%

MSCI World Index captures large and mid-cap representation across 23 Developed Markets countries. With 1,546 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

The MSCI World Index (Net Return) measures the performance of large and mid-sized companies across 23 Developed Markets countries. It reflects both share price movements and dividends, with dividends reinvested after accounting for local withholding taxes.

Capital expenditure (capex) are funds used by a company to acquire, upgrade, and maintain physical assets such as property, plants, buildings, technology, or equipment.
EBITDA, short for earnings before interest, taxes, depreciation, and amortization, tells you how much money a business makes just from running its day-to-day operations.

Forward price-to-earnings (P/E) leverages forecasted earnings to assess a company's future value, providing investors with crucial insights despite potential variability in estimates.

Exajoule (EJ) is a unit denoting large amounts of energy at regional or global level. 1 EJ is roughly equal to 278 TWh (terawatt-hours).

Fund holdings and/or sector allocations are subject to change at any time and are not recommendations to buy or sell any security.

One cannot invest directly in an index.

Earnings Growth is not a measure of future performance.

Opinions expressed are subject to change, are not guaranteed and should not be considered investment advice.

The Guinness Atkinson Alternative Energy Fund's investment objectives, risks, charges and expenses must be considered carefully before investing. The statutory and summary prospectuses contain this and other

important information and can be obtained by calling 800- 915-6565 or visiting www.gafunds.com. Read and consider it carefully before investing.

Investing involves risk, including the risk of principal loss.

The Fund invests in foreign securities which will involve greater volatility and political, economic and currency risks and difference in accounting methods. The risks are greater for investments in emerging markets. The Fund also invests in smaller and mid-cap companies, which will involve additional risks such as limited liquidity and greater volatility than larger companies. The Fund's focus on the energy sector to the exclusion of other sectors exposes the Fund to greater market risk and potential monetary losses than if the Fund's assets were diversified among various sectors.

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