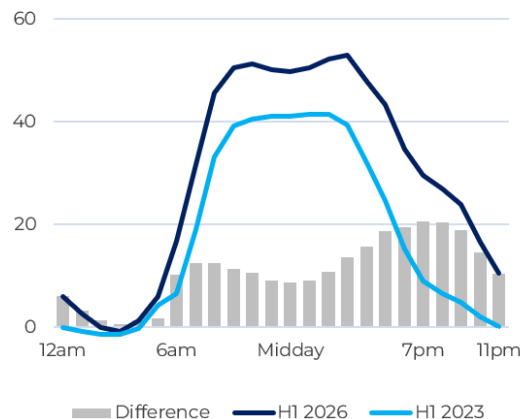


Chart of the Month: SOLAR + STORAGE IN CALIFORNIA

Californian battery energy storage has increased 25 times since 2019 to over 21GW of installed capacity, making it one of the largest installed fleets in the world. Alongside 55.5GW of solar, battery energy storage allowed California to meet more than a quarter of electricity demand in the evening (7-9pm) from its solar and storage assets in 1H 2026.

Solar + Storage share of Californian generation (%)



Source: Ember, CAISO, Guinness Atkinson August 2026

News

- Two key energy powerhouses reached milestones in August. China's installed solar capacity overtook coal to become the largest power source in the country. Installed solar capacity at the end of July reached 1,286GW compared to coal's 1,285GW according to China's National Energy Administration. Secondly, India's clean energy capacity overtook its fossil-fuel-powered generation. Solar capacity in China and India has increased by 34% and 29% per annum respectively since 2020 as improved economics stemming from cheap panel production have led to huge installation growth. The intermittency of solar means coal still generates a greater share of electrical energy in both countries, unlike the US, which in May for the first month ever generated more electricity from solar than coal.
- President Trump imposed Section 232 tariffs on the import of solar photovoltaic (PV) panels and their constituent parts. Section 232 tariffs are used to protect industries deemed imperative to national security and in the case of solar panels have been used to establish a minimum import price on foreign manufactured solar PV wafers, cell and finished panels. A 15% tax on top of the imported price has also been set. The minimum import price for a complete panel as of 1st December 2026 is set at \$0.38 per watt, meaning once stacked on top of existing tariffs, the price of US solar PV panels has increased to \$0.46 per watt, over four times the cost of a panel in China. Despite the price increase, US solar installations are expected to remain robust as projects have been planned in anticipation of the tariff and project developers wrote clauses into power purchase agreements to pass on tariff-related costs to the purchasers of the power, most commonly the hyperscalers.
- Canada has committed to its largest-ever clean energy investment. On 17 August, Ottawa unveiled around \$50bn of hydro and renewables projects in Labrador, expected to add about 7,200MW of clean capacity and lift the

output of Canada's second largest hydroelectric plant by close to half. Federal support runs to \$7.2bn, most visibly a financing guarantee for Gull Island, a new 2,700MW plant on the Churchill River expected to produce around 12TWh but not due online until 2036 or 2037.

- Global electric vehicle (EV) sales rose 9% year-on-year in July to 1.85 million units, according to research firm Benchmark Mineral Intelligence, taking year-to-date sales to 11.5 million, up 4% from 2025. European sales grew 33% as the return of subsidies to major markets drove exceptional performance in France, up 81% at a record 37% penetration rate, Germany, up 46%, and the UK, up 43%. Chinese exports of new-energy vehicles (including hybrids) set another monthly record above 500,000 units while the domestic market fell just 5% in comparison to July 2025, improving the year-to-date figure to -12%. EV sales penetration in China is now above 50% as the wider vehicle market shrinks faster than EV sales. North American sales fell 27% year-on-year as comparisons are now drawn against the pre-expiry surge in US purchases ahead of the September 2025 tax credit removal.
- The US installed a record 20.2GWh of energy storage in the second quarter, according to SEIA and Benchmark Mineral Intelligence, taking the national fleet to 165GWh and double where it stood 18 months ago. Utility-scale accounted for 18GWh, while commercial and industrial installs rose 52% year-on-year, on data center demand, and residential fell 27% following the expiry of the Section 25D tax credit. The report raised the 2026 forecast to 71GWh and 2030 target to 683GWh, as demand continues driven by AI power demand and strong project economics.

Manager's Comments

'Back to School' for sustainable energy

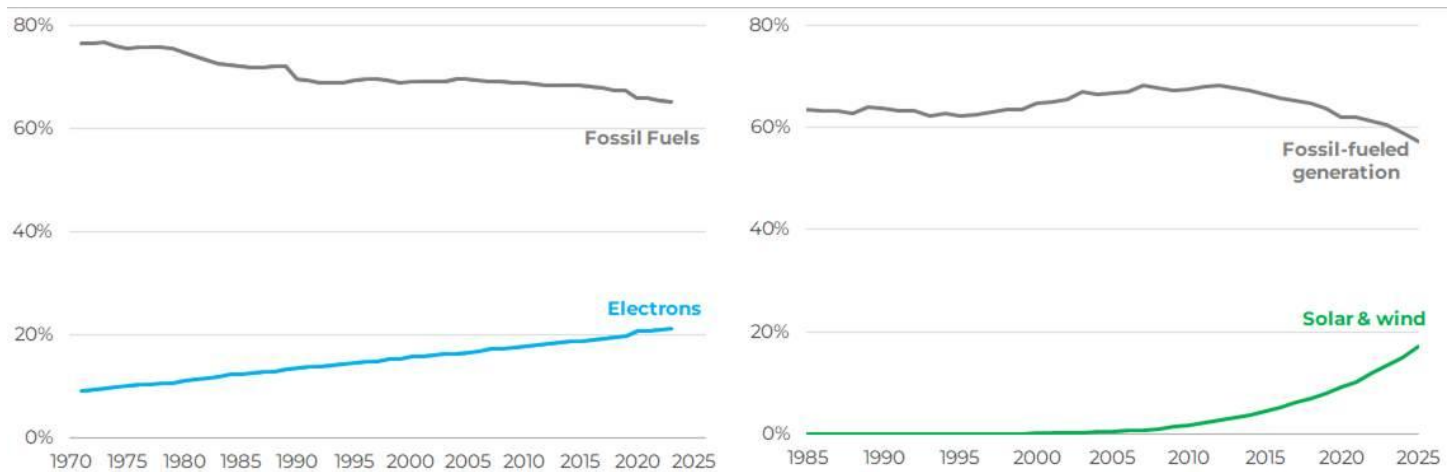
In the 1970s, twin oil shocks drove energy security to the top of the political agenda. The ensuing policy response gave birth to the sustainable energy revolution as we know it today. Fifty years on, history is repeating itself: the world has faced two global energy shocks within the same decade, and policymakers are once again looking to sustainable energy technologies as a solution. In this piece, we review the investment case for sustainable energy and see attractive value in a high-quality, high-growth portfolio of equities.

One of the most acute periods of energy disruption in living memory is the twin oil shock of the 1970s, first triggered by the 1973 Arab oil embargo against the US, followed by supply disruptions from the 1979 Iranian Revolution and the 1980 Iran-Iraq war. This was the biggest disruption to global oil markets the world had then seen and sent prices over \$120 a barrel in today's money. To reduce reliance on fossil fuel imports, policymakers introduced global efficiency standards, accelerated the supply of nuclear energy and boosted research funding for solar power. In effect, the energy shocks of the 1970s triggered a policy response which seeded the energy transition as we know it today.

With the outbreak of **conflict in Iran** and the closure of the Strait of Hormuz, energy markets have once again been thrown into turmoil, with many countries facing a stark reminder of the cost of being overly reliant on fossil fuel imports. Year-to-date, the price of Brent crude oil is up around 60%, European natural gas is up over 100%, and US gasoline prices are up over 40%. While headline inflation in the US has ticked up from just under 3.0% at the end of last year to around 3.5% today, further disruption to the Strait of Hormuz could see energy prices push this higher still. The combination of sticky inflation with energy price uncertainty has resulted in expectations for the next move from the Federal Reserve flipping from an interest rate cut to an interest rate hike. In the short term, this is weighing on sentiment for growth stocks, including some parts of our sustainable energy universe, although the long-term case remains intact.

Economics 101 tells us that as prices rise, demand falls: some of that demand loss is temporary, but some of it seeks an alternative. We already see evidence of this happening. Octopus, the UK's largest domestic retail energy supplier, reported the busiest three-week period in its history following the start of the conflict, with heat pump sales up over 50% month-on-month, solar sales also up over 50% and EV chargers up 20%. Every time someone switches to one of these technologies, it permanently destroys demand for fossil fuels. Similar to the 1970s, today's energy crisis isn't just an oil and gas story but also a **catalyst for the energy transition**.

Despite making steady progress over the past 50 years, **we are still in the foothills of two multi-decade transitions**. Energy demand is shifting from burning hydrocarbon molecules to the consumption of electrons, with electricity as a percentage of final energy demand expected to grow from about 25% in 2025 to about 45% in 2050. At the same time, power supply is decarbonizing as it shifts towards low-carbon energy sources such as solar, wind, and hydroelectric power. These renewable resources currently make up about 15% of primary energy supply today, growing to about 40% by 2040.

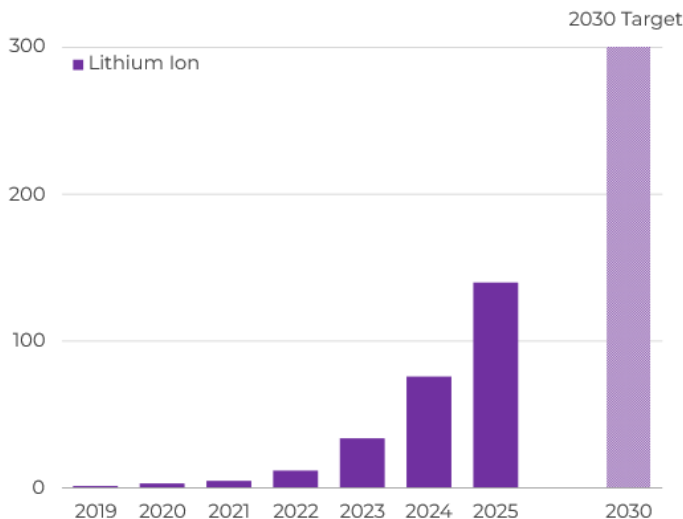


Source: IEA, Ember, Guinness Atkinson. Data to 01.01.2023 (left); 01.01.2025 (right).

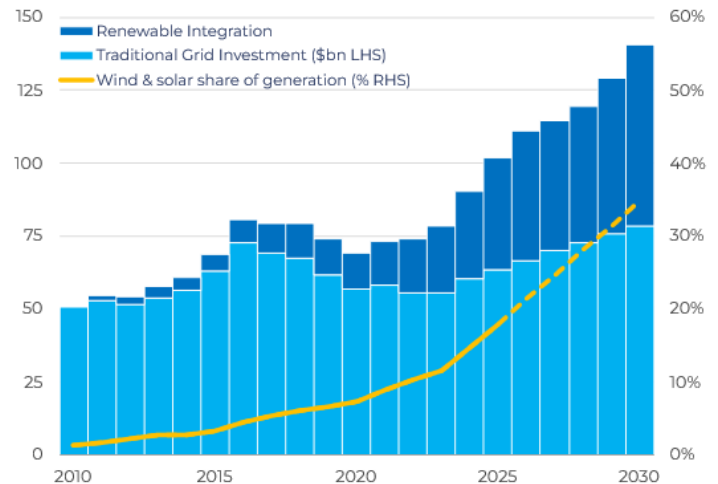
After suffering two energy shocks in short succession, policymakers in **Europe** published AccelerateEU in April, providing a long-term roadmap to strengthened energy resilience in light of the Middle East conflict. The plan builds on the REPowerEU plan issued in 2022 following the Russian invasion of Ukraine, reiterating targets to install 100GW of renewables every year and raising the economy-wide electrification rate to 32% by the end of the decade – a target since extended by July's Electrification Action Plan, which set a more ambitious goal of hitting 46% by 2040, doubling today's rate. AccelerateEU also introduced a new objective to expand installed energy storage capacity from around 55GW today to 200GW by 2030.

In **China**, the Energy Sector's 15th Five-Year Plan was released in late June, setting out national targets to 2030. The plan aims to achieve 50% non-fossil electricity generation, up from just over 40% today – with energy security identified as a primary objective. At the same time, the focus is shifting away from simply installing renewables towards demand electrification and system integration: targets include growing electricity's share of final energy consumption from 30% to 35%, increasing grid spending by 30%, and doubling China's installed storage capacity to around 300GW by 2030.

China's cumulative installed battery storage capacity (GW)



China grid spending (\$bn)



Source: Ember, Goldman Sachs, Guinness Atkinson, August 2026

As a net energy exporter with ample gas reserves, the **United States** is in an enviable position from an energy security perspective. However, with power demand forecasts inflecting higher due to the build-out of data centers, the US is taking an 'all of the above' approach to energy policy to avoid a shortfall in power, and is investing in gas, nuclear and renewables. The issue for President Trump remains the US's reliance on China for renewable technology, namely solar and battery imports. And despite the Trump administration cutting support for clean energy in last year's One Big Beautiful Bill Act, one key incentive which survived was the manufacturing tax credit supporting local clean energy supply chains.

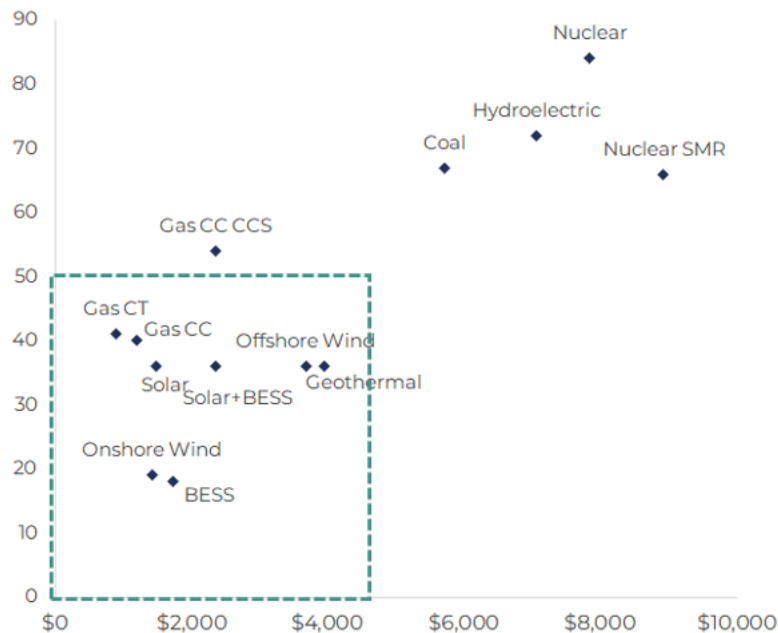
This **inflection in electricity demand** forecasts is a global phenomenon, with developed markets returning to growth after decades of stagnation, though the drivers vary by region. After averaging demand growth of 0-1% per annum between 2015-2025, power consumption in the United States is now expected to grow at closer to 3% per annum to 2030, with data centers driving around 50% of that growth. European power demand is accelerating from around 0% per annum to 2.0-2.5% per annum, with electric vehicles being the primary driver. Meanwhile, Chinese demand growth remains strong, with the electrification of industry driving 40% of incremental growth.

To meet rapidly growing electricity demand, the world needs to install more power capacity, and renewables remain a key part of the solution. **Wind and solar economics remain attractive** versus other sources of generation on a levelized cost basis (3-4 cents per kWh for wind and solar versus 7-18c/kWh for fossil fuels), but cost is no longer the only consideration. We believe data centers are optimizing for power that is firm, fast (within three years), cheap and clean – roughly in that order of importance – and no single solution is a perfect fit.

- **Gas** offers firm power at an acceptable cost, but wait times for new turbines are now five years and emissions from gas power run counter to hyperscalers' sustainability goals.
- **Nuclear** offers firm clean power, but new capacity is expensive and can take over a decade to bring online. Upgrades and restarts can offer a faster and cheaper alternative, but there's a limit to what can be achieved.

- **Renewables** offer clean energy with some of the fastest times to power (2-3 years) at attractive economics, but suffer from intermittency. Storage can help to 'firm' this power, but without meaningful oversizing (which impairs project economics) it cannot support the baseload demand of data centers 24 hours a day, in all weathers.

Average unit capex (\$/kW) and lead time (months) across power sources



Source: EIA, UBS, Guinness Atkinson, August 2026

Bolstered by both short-term and structural tailwinds, we see **energy transition investment** hitting new highs in 2026, rising to around \$2.5 trillion. Clean energy spending has more than doubled since 2020, with a growing share coming from demand-side electrification and system-level investments such as storage and grid infrastructure. We expect clean energy spending to continue growing at a healthy rate to over \$3 trillion by the end of the decade, supported by rising power demand and an accommodative policy backdrop, in light of recent energy shocks.

Portfolio

Key Themes

The **electrification of the energy mix** has been a key focus in recent years. In the US, 2030 peak demand forecasts have been revised upwards every year for the last three years, rising from around 850GW in 2022 to 1,000GW in 2025, with the implied annual growth rate rising from 0.6% per annum in 2022 to 3.7% per annum in 2025.

To support this electrification, **power grids need to be modernized**. In the US, utilities expect to spend more over the next five years (\$1.4tn) than they did in the last ten (\$1.3tn), with a growing share going to power transmission and distribution. BNEF estimates that about 40% of global grid spending to 2050 is needed to repair and replace existing grid infrastructure, a further 25% (approximately) is needed to support demand growth, and about another 25% to support the adoption of renewables.

The rise of electric vehicles should see the global EV fleet grow by over five times over the next decade. Providers of critical EV components – such as power semiconductors and high-voltage connectors – enjoy a content uplift when selling onto an electric platform versus a combustion one. Over the last 10 years this has supported industry growth of 6-7% per annum, which we expect to inflect higher as EVs rise from 25% of global new car sales in 2025 to 45% in 2030.

Within **clean energy equipment manufacturing**, wind and solar remain in high demand, representing >80% of new power installations globally for four years running. Despite a resurgence in gas, we still expect renewables to make up the vast majority of power installations in future. For context, Global Energy Monitor suggests gas capacity additions are expected to rise to around 100GW by 2030, while BNEF sees installations of wind and solar of over 180GW and 760GW respectively by the end of the decade.

Inflecting power demand and rising power prices continue to benefit our **low-carbon power generation names**. Large power consumers seeking to lock in future costs have driven renewable power purchase agreement (PPA) prices higher, with the average strike prices for wind power rising from about \$25/MWh in 2019 to over \$80/MWh in 2026.

Higher power prices are making **building and industrial efficiency** products more attractive, with faster paybacks. And while high interest rates are acting as a near-term drag on building renovation rates, an inflection in industrial activity is supporting industrial efficiency names. Longer-term, the ratcheting up of electrification and energy efficiency standards provides a supportive backdrop for the providers of energy efficiency products.

Positive top-down thematic with attractive bottom-up characteristics

The investment thesis for the Guinness Atkinson Alternative Energy Fund is that companies with pure-play exposure to the energy transition could benefit from faster earnings growth than the broader market. We believe that higher-quality companies are better at converting sales growth into shareholder value and that biasing towards value reduces the risk of overpaying for that growth.

- **Pure-play exposure:** Our analysis suggests that the portfolio at the end of August 2026 had over 70% business exposure to sustainable energy technologies, broadly similar to the levels estimated for our portfolio in 2019.
- **Value discipline:** The fund trades at a 12-month forward price-earnings ratio of 18.4x, roughly in line with the MSCI World, in return for three year forward consensus earnings growth of around 17% per annum. This translates into a compelling price-to-earnings-growth ratio for the fund of just around 1.1x.

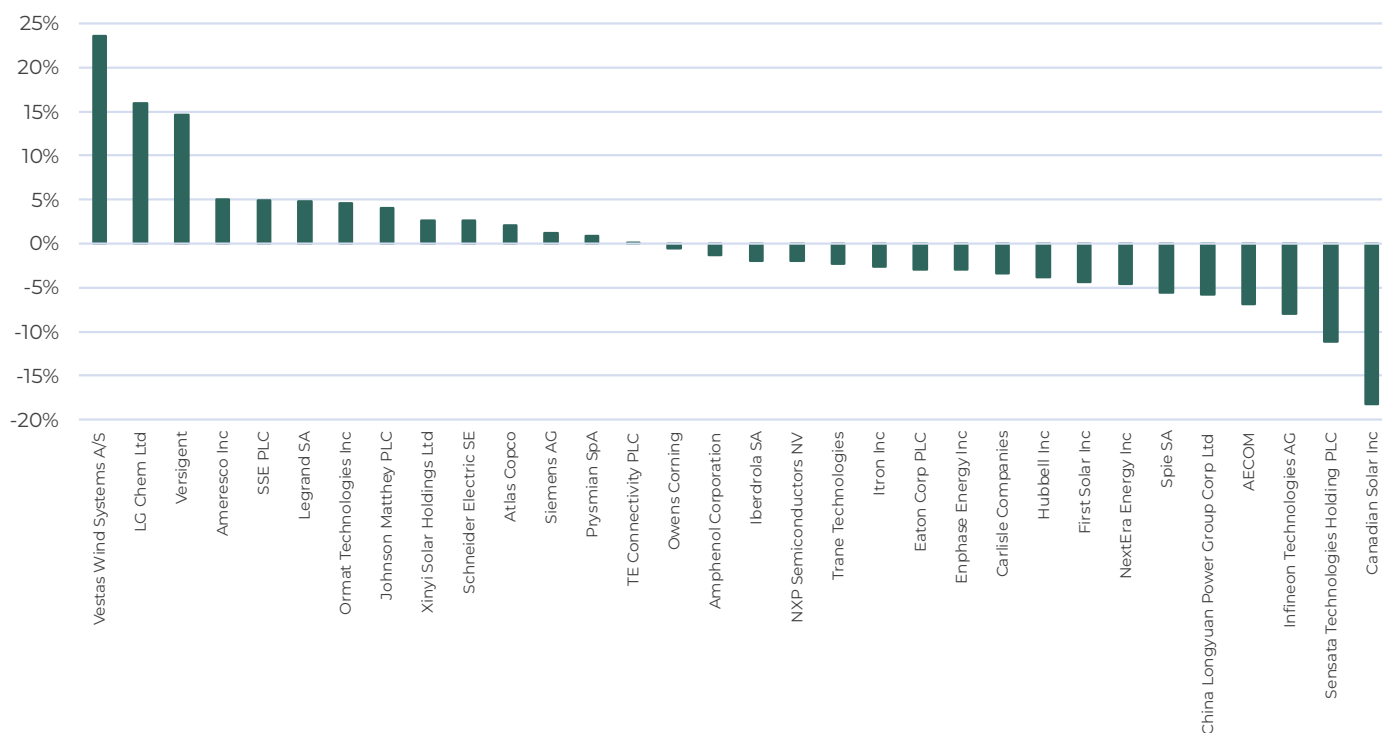
By investing in companies selling products and services that help to deliver the low-carbon transition, we believe the fund provides a vehicle for clients to align their capital with the positive impact of sustainable energy technologies. The companies in our portfolio at the end of 2025 sold products and services that helped displace 634 tonnes of CO₂e (per \$1m of portfolio assets) versus continued use of incumbent fossil fuel technologies. In 2025, the companies in the fund (on a 100% ownership basis) grew their carbon dioxide emissions avoided by 11%.

Fifty years on, the lessons from the 1970s still hold: economies dependent on fossil fuel imports are beholden to their volatility, while sustainable energy technologies offer a route to not only reducing greenhouse gas emissions, but also improving energy security. We expect the second global energy shock of the last decade to act as an accelerant for the twin transitions. With a supportive top-down backdrop, improving bottom-up fundamentals, and a compelling valuation, we believe the fund offers investors an attractive entry point into the sustainable energy theme.

Buys/Sells

No buys or sells were made in the month.

Stock by Stock performance over the month in USD



Source: Bloomberg. Data as of 08.31.2026

Performance

As of 08/31/2026	YTD	1 Year	3 Years	5 Years	10 Years
GAAEX	8.03%	14.51%	6.14%	0.17%	9.44%
MSCI World Index NR	13.10%	20.37%	20.09%	11.20%	13.00%

As of 06/30/2026	YTD	1 Year	3 Years	5 Years	10 Years
GAAEX	14.96%	29.85%	5.01%	2.31%	10.81%
MSCI World Index NR	9.69%	21.34%	19.22%	11.47%	13.13%

All returns after 1 year annualized.

Inception 03.31.2006 Expense ratio* 1.11% (net); 1.89% (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.

* 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, 2029. 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 8/31/26:

1. Schneider Electric SE	4.96%
2. Iberdrola SA	4.91%
3. Siemens AG	4.75%
4. Eaton Corp PLC	4.60%
5. Legrand SA	4.30%
6. Amphenol Corp	4.23%
7. Trane Technologies PLC	4.19%
8. Nextera Energy Inc	4.11%
9. Hubbell Inc	4.08%
10. Prysmian SpA	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.

(MW) megawatt is a unit of power that equals one million watts (1,000 kilowatts)

1 GWh equates to 1 billion watt-hours (Wh)

Terawatt-hour (TWh) is a unit of energy representing one trillion watt hours

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

The price-to-earnings (P/E) ratio compares a company's share price with its earnings per share (EPS). Analysts and investors use this to determine the relative value of a company's shares in side-by-side comparisons.

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.

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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