

# Thematic ETFs performance

Q2 2023

## Key risk

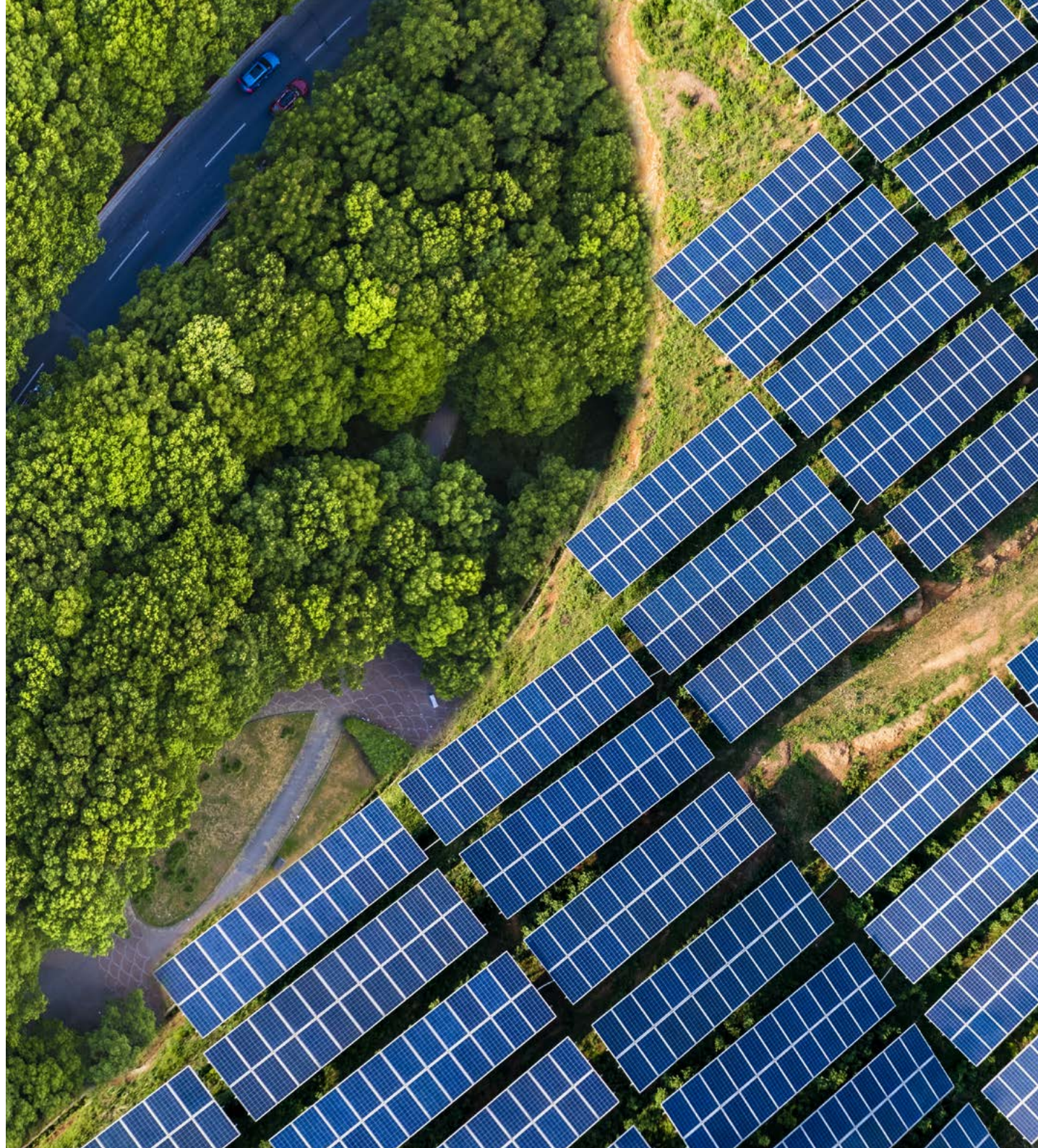
The value of an investment and any income taken from it is not guaranteed and can go down as well as up; You may not get back the amount you originally invested. Simulated and past performance is not a guide to the future.





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# L&G Thematic ETFs



Visit [lgim.com/uk-etf](https://lgim.com/uk-etf) for further information and latest updates.

## Performance commentary

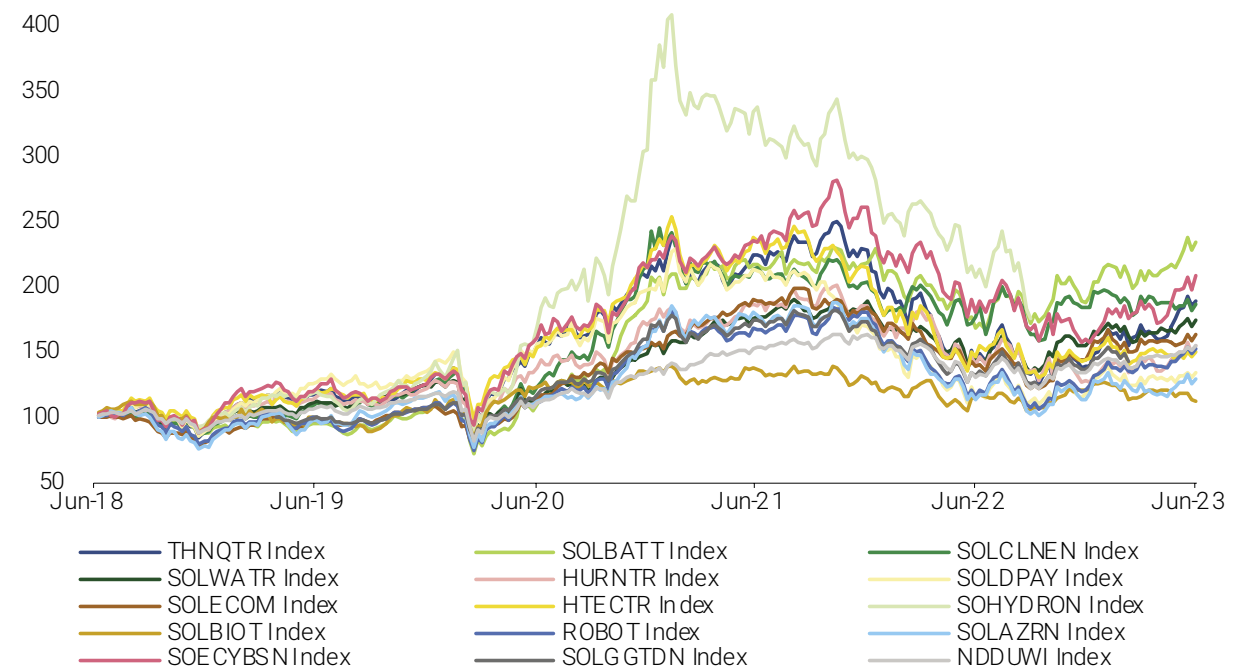
In the second quarter of 2023, most thematic strategies delivered positive returns. IT and consumer discretionary stocks rebounded, and technology-driven themes kept trending higher.

The themes that performed best among our thematic strategies were Artificial Intelligence, Battery Value-Chain and Emerging Cyber Security. The Pharma Breakthrough, Clean Energy and Hydrogen Economy themes were the only ones that posted negative returns.

## Key risk

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## Historical and simulated index performance\*



Source: Bloomberg, as of 30 June 2023, all values are based in USD.

\*The back-tested index data have been sourced from the index providers; they are based on what they perceive to be reasonable assumptions and objective data.



# L&G Thematic ETFs

## Rolling 12 month performance to 30/06/2023

| Index ticker   | ETF ticker | 2018  | 2019  | 2020  | 2021   | 2022   | 2023  |
|----------------|------------|-------|-------|-------|--------|--------|-------|
| THNQTR Index   | AIAI       | 52.3% | 18.0% | 29.6% | 48.3%  | -38.0% | 36.2% |
| SOLBATT Index  | BATT       | 6.9%  | -6.2% | 12.9% | 101.6% | -21.1% | 37.3% |
| SOLCLNEN Index | RENV       | 6.5%  | 8.4%  | 11.1% | 76.8%  | -18.5% | 6.8%  |
| SOLWATR Index  | GLUG       | 16.5% | 11.8% | 2.5%  | 53.6%  | -18.3% | 21.1% |
| HURNTR Index   | USPY       | 26.3% | 15.1% | 20.2% | 35.5%  | -25.4% | 11.7% |
| SOLDPAY Index  | DPAY       | 44.4% | 27.0% | 19.9% | 38.7%  | -45.7% | 18.0% |
| SOLECOM Index  | ECOM       | 16.3% | -2.1% | 13.2% | 69.6%  | -26.8% | 18.0% |
| HTECTR Index   | DOCT       | 39.0% | 20.9% | 24.9% | 57.6%  | -39.3% | 4.6%  |
| SOHYDRON Index | HTWO       | -     | -     | 39.3% | 103.1% | -38.9% | -5.5% |
| SOLBIOT Index  | BIOT       | 9.8%  | -0.3% | 22.3% | 11.3%  | -16.8% | -0.9% |
| ROBOT Index    | ROBO       | 18.4% | 0.2%  | 10.1% | 51.2%  | -30.4% | 30.9% |
| SOLAZRN Index  | LAZR       | 29.8% | -2.2% | 13.3% | 61.9%  | -36.1% | 12.5% |
| SOECYBSN Index | ESPY       | 28.1% | 21.3% | 33.5% | 46.3%  | -23.3% | 16.2% |
| SOLGGTDN Index | THMZ       | -     | -     | -     | 50.1%  | -24.9% | 18.3% |
| NDDUWI Index   | MSCI World | 11.1% | 6.3%  | 2.8%  | 39.0%  | -14.3% | 18.5% |

Source: Bloomberg , all values are based in USD; as at 30 June 2023. Performance based on index levels gross of fees but net of dividend withholding taxes, where applicable. The effect of fees and charges would reduce the returns shown.

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# Macro update

## Economy and policy

In April the International Monetary Fund (IMF) released its World Economic Outlook, according to which world economies are still adjusting to the shocks of 2020-22, with this year's banking stress adding further pressure. Amid sticky inflation, recession concerns and historically high debt levels, their expectation is for economic growth to slow, especially for advanced economies. In May the G7 summit took place in Japan, where world leaders condemned Russia's invasion of Ukraine, renewed their commitment to foster a strong and resilient global economic recovery, and recognised their role in limiting global temperature rises, among other topics.

In the US, debt ceiling negotiations were resolved, and the Fed raised rates by 25bps. The European Central Bank raised rates twice by 25bps and the Bank of England by 25bps and 50bps in an effort to control inflation. Equities kept trending higher throughout the quarter, with pressure on commodities, as gold peaked at \$2,050/Oz in May, and the VIX index declined and fell below 15.

Source: LGIM, IRENA, June 2023.

## Climate news

According to IRENA's the global energy transformation requires systemic innovation across market design and regulation, system planning and operation, business models, technology and infrastructure. Meeting the Paris Agreement goals would require the share of electricity in the energy mix to more than double in 30 years.

Source: [IRENA](#), June 2023

## Breakdown of total final energy consumption by energy carrier between 2020 and 2050 under the 1.5°C Scenario

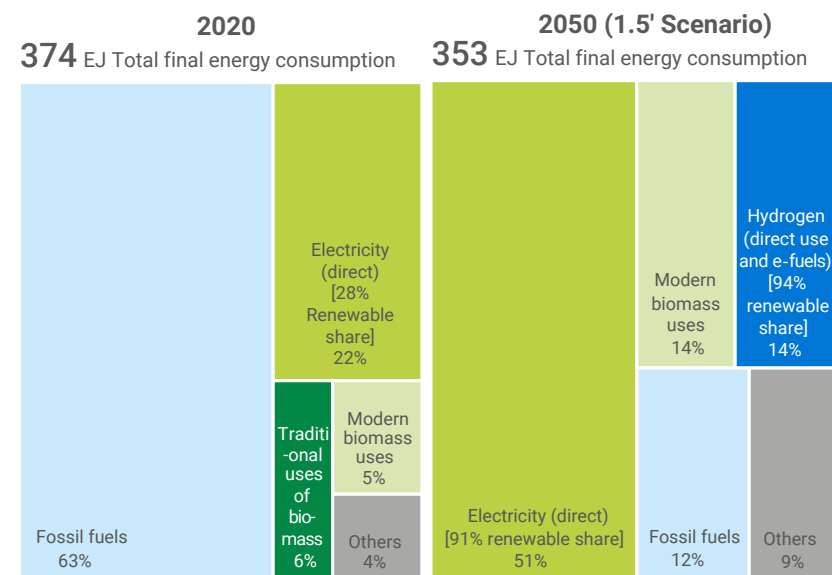


Chart source: [IRENA](#), June 2023

For illustrative purposes only. The above information does not constitute a recommendation to buy or sell any security. There is no guarantee that any forecasts made will come to pass.



# Macro update

## Investment themes

**Ecommerce logistics:** The World Bank's Logistic Performance Index (LPI) measures the efficiency and effectiveness of a country's logistics performance. The 2023 report identifies areas that could be improved to increase the reliability and resilience of logistics as a driver of economic growth through international trade, underlining the importance of investing in digital technologies, infrastructure, environmentally friendly and energy-efficient warehousing.

Source: [Transport Intelligence](#), May 2023

**Cyber security:** Accelerated digital transformation, hybrid working models, a new generation of users and high manufacturing demand in the region have contributed to Asia Pacific having a higher rate of cyber attacks than global counterparts, according to the World Economic Forum.

Source: [World Economic Forum](#), June 2023

**Hydrogen economy:** According to Deloitte's 2023 global green hydrogen outlook, clean hydrogen has significant decarbonisation potential for current and new end uses, of up to 85 gigatons of carbon dioxide equivalent in cumulative greenhouse gas emissions by 2050.

Source: [Deloitte](#), June 2023

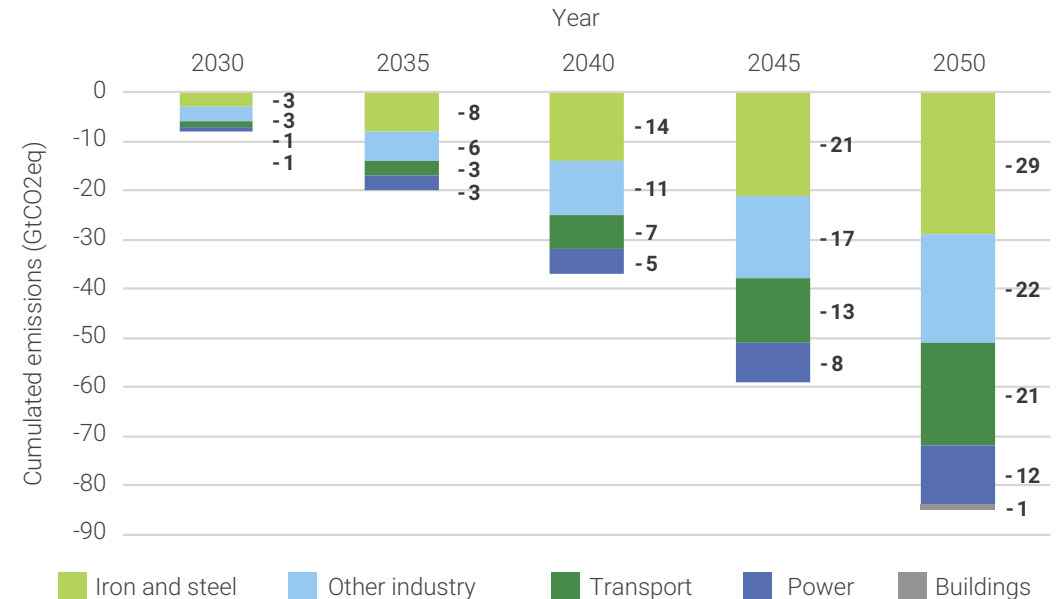


## Did you know?

We have released the results of LGIM's seventh Climate Impact Pledge, our engagement programme to encourage companies to tackle climate change and the transition to net-zero carbon emissions. The report outlines the actions we took in 2022 to drive positive change on behalf of our clients on decarbonisation and the related issues of biodiversity and nature loss. You can read it [here](#)

Source: LGIM, June 2023

## GHG emissions abatement unlocked by clean hydrogen, 2030 to 2050



Source: LGIM, Transport Intelligence, World Economic Forum, Deloitte, June 2023.

Chart source: [Deloitte](#), June 2023

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# ETF Updates



## Thematic investment insights

Want to stay ahead of the latest developments shaping the future of technology, energy and resources, and demographics? Our regular blogs and podcasts cover a wide range of key thematic investment topics.



### Artificial Intelligence podcast:

Artificial Intelligence, investing and you

[Listen here](#)



### Clean Energy blog:

Capturing the energy transition opportunities

[Read here](#)



### Artificial Intelligence blog:

Think AI is amazing? Wait until it meets quantum computing

[Read here](#)



### Clean Water blog:

Is water the most overlooked natural resource?

[Read here](#)



### Clean Water podcast:

Is water the most overlooked natural resource?

[Listen here](#)



### Thematic investment conference:

The mythbusters' guide to thematic investment

[Watch here](#)



### Cyber Security blog:

How is AI changing cyber security?

[Read here](#)



### Metaverse blog (from our access range of ETFs):

How metaverse technology is powering real-world innovation

[Read here](#)



### Pharma Breakthrough podcast:

How the market made a home for orphan drugs

[Listen here](#)



### Emerging Cyber Security blog:

Smart devices: an open door to hackers?

[Read here](#)





# ETF overlaps

## Overlap across our themes

The following chart shows the overlap across our thematic range of investment strategies. When we design an investment strategy, we aim to provide pure exposure to the theme, which results in our thematic ETFs usually having little to no overlap, where possible. This allows investors to allocate according to their preferences and aim to reduce concentration risks in a portfolio.



|                         | Artificial Intelligence | Battery Value-Chain | Clean Energy | Clean Water | Cyber Security | Digital Payments | Ecommerce Logistics | Emerging Cyber Security | Global Thematic | Healthcare Breakthrough | Hydrogen Economy | Pharma Breakthrough | Optical Technology & Photonics |
|-------------------------|-------------------------|---------------------|--------------|-------------|----------------|------------------|---------------------|-------------------------|-----------------|-------------------------|------------------|---------------------|--------------------------------|
| Battery Value-Chain     | 2% (1)                  |                     |              |             |                |                  |                     |                         |                 |                         |                  |                     |                                |
| Clean Energy            | 2% (1)                  | 8% (3)              |              |             |                |                  |                     |                         |                 |                         |                  |                     |                                |
| Clean Water             | 0% (0)                  | 0% (0)              | 0% (0)       |             |                |                  |                     |                         |                 |                         |                  |                     |                                |
| Cyber Security          | 12% (8)                 | 0% (0)              | 0% (0)       | 0% (0)      |                |                  |                     |                         |                 |                         |                  |                     |                                |
| Digital Payments        | 5% (3)                  | 0% (0)              | 0% (0)       | 0% (0)      | 1% (1)         |                  |                     |                         |                 |                         |                  |                     |                                |
| eCommerce Logistics     | 3% (2)                  | 0% (0)              | 0% (0)       | 0% (0)      | 0% (0)         | 0% (0)           |                     |                         |                 |                         |                  |                     |                                |
| Emerging Cyber Security | 14% (8)                 | 0% (0)              | 0% (0)       | 0% (0)      | 44% (23)       | 2% (1)           | 0% (0)              |                         |                 |                         |                  |                     |                                |
| Global Thematic         | 13% (61)                | 16% (26)            | 13% (33)     | 9% (46)     | 9% (26)        | 1% (3)           | 11% (35)            | 14% (38)                |                 |                         |                  |                     |                                |
| Healthcare Breakthrough | 5% (4)                  | 0% (0)              | 0% (0)       | 0% (0)      | 0% (0)         | 0% (0)           | 0% (0)              | 0% (0)                  | 15% (69)        |                         |                  |                     |                                |
| Hydrogen Economy        | 0% (0)                  | 0% (0)              | 5% (2)       | 0% (0)      | 0% (0)         | 0% (0)           | 0% (0)              | 0% (0)                  | 1% (2)          | 0% (0)                  |                  |                     |                                |
| Pharma Breakthrough     | 0% (0)                  | 0% (0)              | 0% (0)       | 0% (0)      | 0% (0)         | 0% (0)           | 0% (0)              | 0% (0)                  | 15% (31)        | 7% (5)                  | 0% (0)           |                     |                                |
| Photonics               | 2% (1)                  | 0% (0)              | 0% (0)       | 0% (0)      | 0% (0)         | 0% (0)           | 0% (0)              | 0% (0)                  | 1% (10)         | 1% (1)                  | 0% (0)           | 0% (0)              |                                |
| Robotics and Automation | 14% (11)                | 2% (2)              | 1% (1)       | 1% (1)      | 0% (0)         | 0% (0)           | 4% (3)              | 0% (0)                  | 13% (71)        | 14% (10)                | 0% (0)           | 0% (0)              | 14% (10)                       |

Source: LGIM, Bloomberg as at 30 June 2023. Figures represent % weight and number of stocks. Percentage overlap is calculated as the minimum of weight overlap between two portfolios.

For illustrative purposes only. The above information does not constitute a recommendation to buy or sell any security.





# Artificial Intelligence

## Company spotlight

### MongoDB

MongoDB, headquartered in New York and founded in 2007, is a leading provider of database software and infrastructure that facilitates the development and operations of modern applications to more than 43,000 customers. The name is a reference to 'humongous' and a nod to the goal of supporting the largest datasets and most ambitious products, which are increasingly shifting from "cloud-first" to "AI-first". Its flagship product, MongoDB Atlas, leverages (but is not limited to) its open-source MongoDB data platform as a fully managed, flexible database service.

Fiscal 2024 earnings beat the retrospectively conservative guidance, with revenue up 29% year-on-year to \$368 million and a 75% gross margin, with 40% growth on Atlas and the highest net new customer wins in over two years. MongoDB's developer and data platform is in a prime position to benefit from and contribute to AI adoption. MongoDB also raised its full-year guidance significantly to \$1.42-1.56 earnings per share (EPS) versus the prior \$0.96-1.1 EPS.

On June 22, MongoDB announced several developments, including a new partnership with Google Cloud and innovations that enhance real-time data processing and vector search, the latter being a critical component in generative AI applications. Existing customers, already experiencing improved performance through MongoDB's core products, are anticipated to extend their use of these upgraded features to maintain competitiveness and enhance product offerings. MongoDB is well-positioned as a beneficiary of multiple AI trends (including generative AI) and continues to make strong products and partnerships with other leading AI enterprises as well as leading early-stage, open-source technologies to be a core leader in AI product development.

## Last quarter performance commentary

The ROBO Global Artificial Intelligence Index returned +11.0% over the quarter.

The theme extended its 2023 gains to 37% as the AI ecosystem continued to recover after a dramatic

pullback in 2022. Investors are playing catch-up with the remarkably rapid adoption of generative AI. This is best reflected in the dramatic underestimation of demand for GPUs, which Nvidia's sales guidance brought under the spotlight last month.

Many investors are focused on the largest cap companies, which trade at a significant premium to the market. However, the rest of the AI ecosystem, which trades on lower valuations, could continue to see pull-through and increased adoption for the remainder of the year. This includes other areas of AI applications, such as business process automation, logistics and manufacturing, healthcare, and autonomous vehicles.

Source: LGIM, Bloomberg, ROBO Global®, as at 30 June 2023.

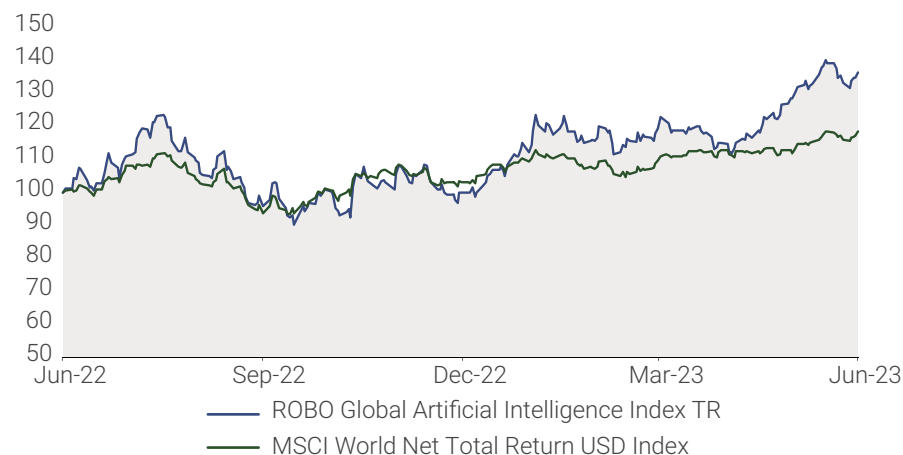
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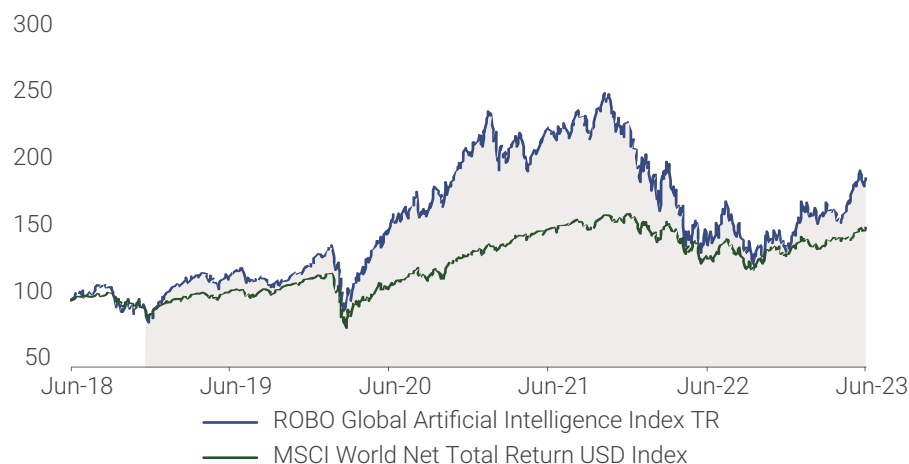
# Artificial Intelligence

Performance

## Historical and simulated performance (1y)



## Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

## Index performance\*

| Index performance* | QtD     | 1 year  | 3 years | 5 years |
|--------------------|---------|---------|---------|---------|
| Cumulative Return  | 11.01%  | 36.18%  | 25.16%  | 91.28%  |
| Annualized Return  |         |         | 7.77%   | 13.84%  |
| Volatility         | 19.52%  | 30.44%  | 29.67%  | 29.66%  |
| Sharpe Ratio       | 266.84% | 118.94% | 26.20%  | 46.68%  |
| Max Drawdown       | -8.75%  | -26.91% | -50.09% | -50.09% |

## Index total return contribution (QtD)

| Top 5           |         | Bottom 5        |          |
|-----------------|---------|-----------------|----------|
| Mongodb Inc     | ▲ 1.12% | Etsy Inc        | ▼ -0.42% |
| Nvidia Corp     | ▲ 1.07% | Alteryx Inc -A  | ▼ -0.41% |
| Pure Storage-A  | ▲ 0.75% | Alibaba Grp-Adr | ▼ -0.40% |
| Global Unichip  | ▲ 0.72% | Illumina Inc    | ▼ -0.38% |
| Shopify Inc - A | ▲ 0.64% | Jd.Com Inc-Adr  | ▼ -0.34% |

## Portfolio composition

| Latest additions | Latest deletions |
|------------------|------------------|
| Datadog          | Kingdee          |
|                  | Netflix          |
|                  | Wix              |
|                  | Yext             |

## Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | AIAI LN | ISIN                 | IE00BK5BCD43 |
| TER                | 0.49%   | Inception date       | 02/07/2019   |
| Currency           | USD     | Index inception date | 14-Dec-18    |
| Securities lending | No      | Replication method   | Physical     |

## Key risk

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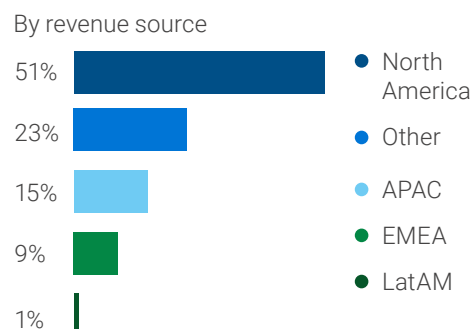
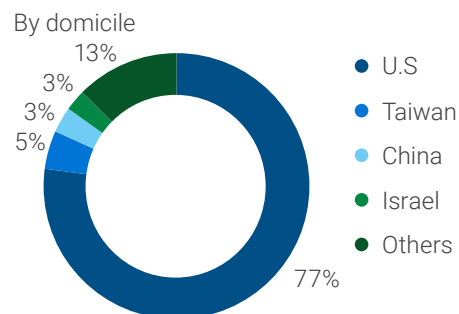




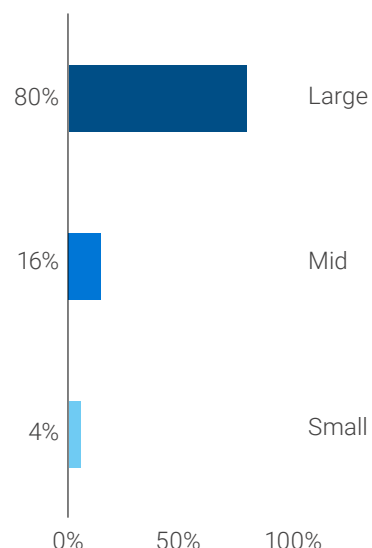
# Artificial Intelligence

## Characteristics

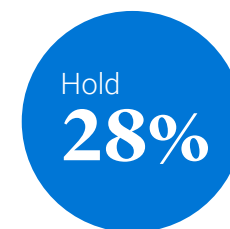
### Geographical breakdown



### Market cap breakdown



### Third party analyst stock consensus ratings\*\*



### Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 1.01    | 0.89    |
| Price/Sales    | 6.65    | 6.57    |
| BPS            | 12.93   | 12.58   |
| P/E Positive   | 43.42   | 29.19   |
| ROE            | 7.69    | 5.78    |
| Price/Book     | 7.75    | 7.12    |
| P/E (1y fwd)   | 70.78   | 60.47   |
| P/E (3y fwd)   | 43.58   | 36.09   |
| Sales (1y fwd) | 21,108  | 18,313  |
| Sales (3y fwd) | 28,590  | 25,243  |

### Constituents overlap

|                   |       |
|-------------------|-------|
| S&P 500           | 14.7% |
| MSCI World        | 12.3% |
| Nasdaq 100        | 18.1% |
| Total stocks = 65 |       |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

Consensus ratings do not constitute a recommendation to buy or sell any security. The consensus ratings presented in this chart are not in relation to the L&G Thematic ETFs.

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# Battery Value-Chain

## Company spotlight

### Panasonic Holdings

Founded in 1918 in Osaka, Japan, Panasonic Corporation is a worldwide leader in the development of diverse electronics technologies and solutions for customers in the battery value-chain and consumer electronic markets. The company operates 550+ subsidiaries globally and is divided into eight business segments covering automotive batteries, industrial equipment, automotive equipment, e-components and home appliances.

Panasonic's battery business is one of the world's largest by market share [source: Goldman Sachs Research, January 2022] and is a leader in battery technology innovation. The company is focused on cylindrical lithium-ion batteries (mainly for Tesla), prismatic lithium-ion batteries and dry cell batteries. Cylindrical batteries supplied to Tesla are made at Panasonic's Suminoe and Kaizuka factories in Japan and at the Gigafactory in Nevada, a joint venture with Tesla. Beyond Tesla, Panasonic is receiving many inquiries about its cylindrical batteries from other potential customers, providing great opportunity for further customer reach in the future. The company also has a long-standing battery relationship with Toyota, having formed joint venture Panasonic EV Energy in 1996 to manufacture nickel metal hydride batteries for hybrid vehicles.

Source: LGIM, Bloomberg, FastMarkets, Benchmark Mineral Intelligence, as at 30 June 2023.

Panasonic's battery value-chain solutions include battery technologies for hybrid electric and electric vehicles; solar storage solutions designed to store solar energy in commercial and residential electrical grids; EV charging solutions such as switches, modules and relays designed to support charging guns; EV-related wireless communication; monitoring systems to identify leaks; and even custom lithium-ion battery packs.

## Last quarter performance commentary

The Solactive Battery Value-Chain Index returned +10.6% over the quarter.

In May US battery-grade lithium producer Livent announced the acquisition of Allkem, an Australian specialty lithium chemical company, for \$10.6bn. This equity transaction is expected to complete by the end of the year. Allkem and Livent, both index members, expect to leverage synergies in their extraction and processing processes and they merged with the objectives of accelerating supply growth in Canada and Argentina, and increasing pricing power, especially with automotive clients. Combined they are expected to produce 90,000 tonnes of lithium carbonate equivalent (LCE) this year and 250,000 LCE by 2027 ([source](#)).

On the geopolitical front, Chile's president announced the intention to nationalise the country's lithium industry. Its government is also working with Mexico, Argentina and Bolivia to create a lithium association that would account for more than half the world's reserves.

In the US EV penetration surpassed the 5% mark (at 6.6%), an indicator of mass adoption. According to FastMarkets this could represent a milestone for further adoption in the region, boosted not only by the Inflation Reduction Act but also by the new Environmental Protection Agency standards, requiring a minimum of 60% original equipment manufacturer vehicle production from EVs ([source](#)).

Tesla entered partnerships with Ford and General Motors to give their electric vehicles access to Tesla's Supercharger network, the biggest in North America, in a step towards easing drivers' concerns around availability of charging stations.

The main contributors to performance were Eos Energy (returned +68.9%), Panasonic Holdings (+36.5%) and HD Hyundai Electric (+69.9%). The main detractors were Mineral Resources (-11.8%), SolarEdge Technologies (-11.5%) and Core Lithium (+22.5%).

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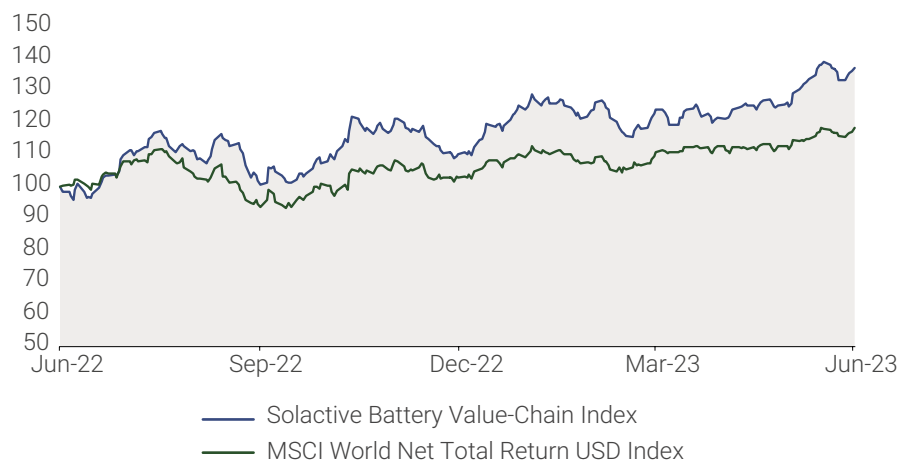




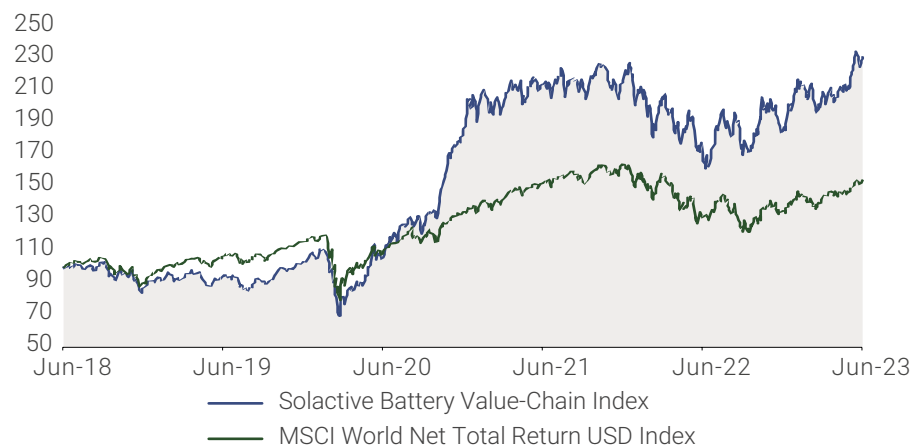
# Battery Value-Chain

Performance

## Historical and simulated performance (1y)



## Historical and simulated performance (5y)



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## Index performance\*

| Index performance* | QtD     | 1 year  | 3 years | 5 years |
|--------------------|---------|---------|---------|---------|
| Cumulative Return  | 10.55%  | 37.31%  | 118.41% | 131.27% |
| Annualized Return  |         |         | 29.77%  | 18.25%  |
| Volatility         | 14.08%  | 19.71%  | 20.36%  | 20.92%  |
| Sharpe Ratio       | 351.87% | 189.41% | 146.23% | 87.21%  |
| Max Drawdown       | -4.41%  | -14.16% | -29.07% | -37.30% |

## Index total return contribution (QtD)

| Top 5            |         | Bottom 5         |          |
|------------------|---------|------------------|----------|
| Eos Energy Enter | ▲ 1.82% | Mineral Resource | ▼ -0.56% |
| Panasonic Holdin | ▲ 1.36% | Solaredge Techno | ▼ -0.48% |
| Hd Hyundai Elect | ▲ 1.36% | Core Lithium Ltd | ▼ -0.48% |
| Tesla Inc        | ▲ 1.27% | Samsung Sdi Co   | ▼ -0.41% |
| Allkem Ltd       | ▲ 1.09% | Ngk Insulators   | ▼ -0.33% |

## Portfolio composition

| Latest additions | Latest deletions |
|------------------|------------------|
| Wartsila Oyj     | ESS Tech         |
| Eos Energy       |                  |
| Core Lithium     |                  |
| CALB             |                  |

## Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | BATT LN | ISIN                 | IE00BF0M2Z96 |
| TER                | 0.49%   | Inception date       | 23/01/2018   |
| Currency           | USD     | Index inception date | 03-Jan-18    |
| Securities lending | No      | Replication method   | Physical     |

## Key risk

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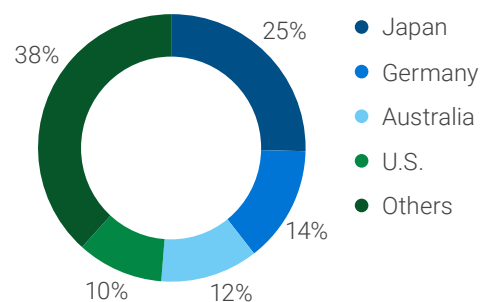


# Battery Value-Chain

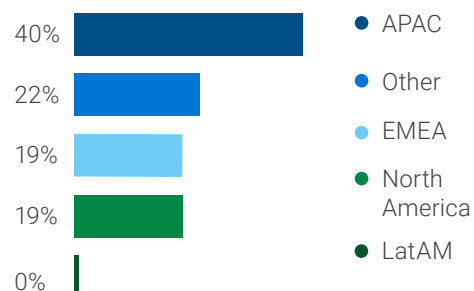
Characteristics

## Geographical breakdown

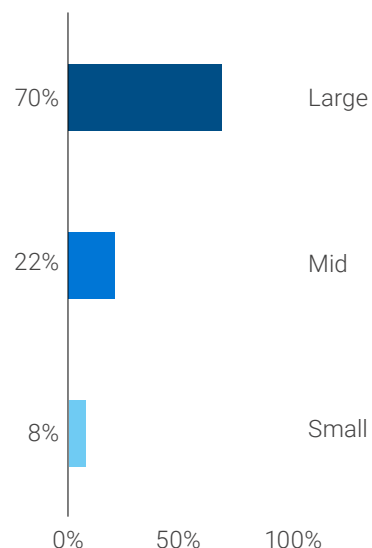
By domicile



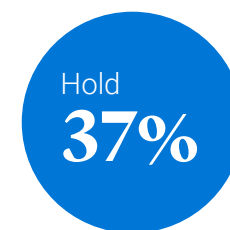
By revenue source



## Market cap breakdown



## Third party analyst stock consensus ratings\*\*



## Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 1.85    | 1.02    |
| Price/Sales    | 1.02    | 0.80    |
| BPS            | 15.65   | 11.79   |
| P/E Positive   | 16.06   | 13.43   |
| ROE            | 10.85   | 10.63   |
| Price/Book     | 2.74    | 1.79    |
|                |         |         |
| P/E (1y fwd)   | 33.66   | 13.97   |
| P/E (3y fwd)   | 21.61   | 18.53   |
| Sales (1y fwd) | 22,402  | 39,627  |
| Sales (3y fwd) | 36,127  | 36,576  |

## Constituents overlap

|                   |      |
|-------------------|------|
| S&P 500           | 1.9% |
| MSCI World        | 1.9% |
| Nasdaq 100        | 4.3% |
| Total stocks = 32 |      |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

Consensus ratings do not constitute a recommendation to buy or sell any security. The consensus ratings presented in this chart are not in relation to the L&G Thematic ETFs.

## Key risk

The value of an investment and any income taken from it is not guaranteed and can go down as well as up; You may not get back the amount you originally invested.





# Clean Energy

## Company spotlight

### Mitsubishi Corporation

Mitsubishi Corporation (MC) is a global integrated business enterprise that develops and operates businesses with its subsidiaries in approximately 90 countries and regions worldwide. MC has 10 business groups that operate across virtually every industry, including finance, banking, energy, machinery, chemicals and food.

The company's Power Solution Group supplies components for smart grids, power plants and electricity generation, focusing specifically on offshore wind power and solar power generation. To date, MC has been expanding the Power Solution Group through power generation projects in Japan and overseas and moving forward it plans to double its renewable energy power generation capacity by FY2030 ([source](#)).

In August 2018, the company acquired Nexamp, a Boston-based distributed solar power generation company also engaged in developing, constructing and operating distributed solar power facilities ([source](#)). Following the acquisition, MC aims to continue expanding its business with new technologies including PV plus storage systems.

In March 2020, along with Chubu Electric Power, MC purchased a majority share of Eneco, an integrated energy company headquartered in the Netherlands with operations also in Belgium and Germany. Commencing operations in 2019, the company operates one of the largest wind farms in Belgium, which can meet the needs of 400,000 households ([source](#)).

MC operates TOMONI, a suite of intelligent solutions that accelerates decarbonisation with power plant design and system knowledge. Existing and new power plants globally have adopted TOMONI to improve efficiency and increase flexibility to better complement intermittent renewable energy sources. The result supports decarbonisation by reducing emissions while helping the grid deliver more reliable power during the energy transition.

## Last quarter performance commentary

The Solactive Clean Energy Index NTR returned -3.2% over the quarter.

After a record year of capacity additions in 2021, performance in 2022 reflected concerns about interest rates and inflation. In 2023, however, there is more optimism about a comeback of clean energy stocks,

and the IEA estimates that solar PV and wind capacity will reach a record 33% increase in 2023 and will keep growing in 2024, boosted by policy efforts and higher fossil fuel prices ([source](#)). Despite higher costs of capital and economic uncertainty, policy support such as the US Inflation Reduction Act and the European Net-Zero Industry Act are driving clean energy innovation. According to the analysis, public spending on energy R&D grew by 10% in 2022 to ~\$44bn, 80% of which is dedicated to clean energy. R&D budgets for listed companies grew in 2022, and early-stage venture capital investment into clean energy start-ups reached a \$6.7bn record (source: IEA, June 2023).

Over the quarter, offshore wind farm developer Orsted invented an Uncrewed Surface Vessel (USV) to measure meteorological and ocean condition related data that can provide actionable insights for the installation of offshore wind farms in very rough conditions. The patented prototype is now being used for serial production.

The main contributors to performance were Mitsubishi Corporation (returned +34.2%), Tesla (+26.2%), and Marubeni (+25.0%), a Japanese diversified independent power producer and component supplier. The main detractors were pure-play independent power producer West Holdings (-29.2%), OEM Siemens Energy (-19.7%) and solar component supplier Enphase Energy (-20.4%).

Source: LGIM, Bloomberg, as at 30 June 2023.

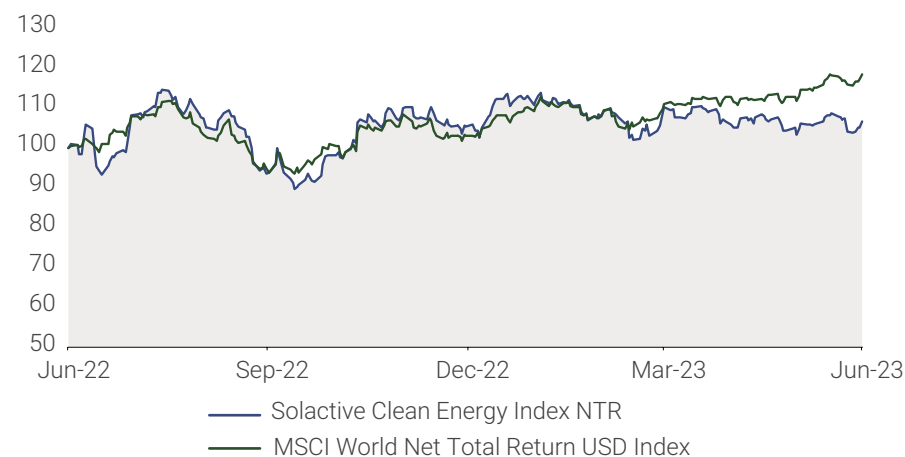
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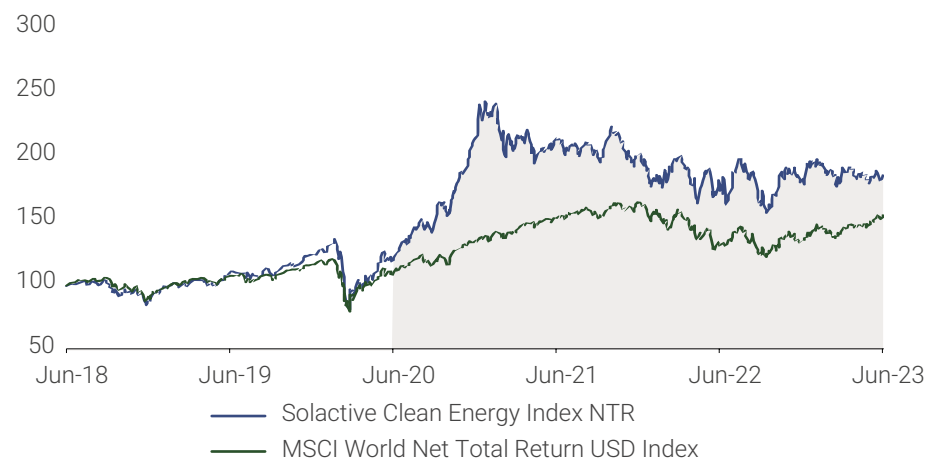
# Clean Energy

Performance

## Historical and simulated performance (1y)



## Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

## Index performance\*

| Index performance* | QtD     | 1 year  | 3 years | 5 years |
|--------------------|---------|---------|---------|---------|
| Cumulative Return  | -3.15%  | 6.75%   | 53.93%  | 85.28%  |
| Annualized Return  |         |         | 15.47%  | 13.12%  |
| Volatility         | 14.42%  | 22.72%  | 22.24%  | 22.45%  |
| Sharpe Ratio       | -83.55% | 29.74%  | 69.59%  | 58.46%  |
| Max Drawdown       | -6.57%  | -21.67% | -35.88% | -40.72% |

## Index total return contribution (QtD)

| Top 5            |         | Bottom 5         |          |
|------------------|---------|------------------|----------|
| Mitsubishi Corp  | ▲ 0.83% | West Holdings Co | ▼ -0.75% |
| Tesla Inc        | ▲ 0.70% | Siemens Energy A | ▼ -0.52% |
| Marubeni Corp    | ▲ 0.60% | Enphase Energy   | ▼ -0.48% |
| Fugro Nv         | ▲ 0.54% | Andritz Ag       | ▼ -0.47% |
| Sma Solar Techno | ▲ 0.48% | Soltec Power Hol | ▼ -0.40% |

## Portfolio composition

| Latest additions     | Latest deletions     |
|----------------------|----------------------|
| no rebalancing in Q2 | no rebalancing in Q2 |

## Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | RENW LN | ISIN                 | IE00BK5BCH80 |
| TER                | 0.49%   | Inception date       | 11/11/2020   |
| Currency           | USD     | Index inception date | 26-Jun-20    |
| Securities lending | No      | Replication method   | Physical     |

## Key risk

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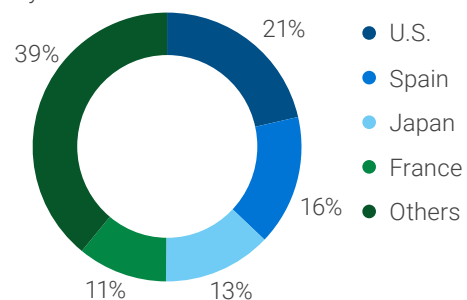


# Clean Energy

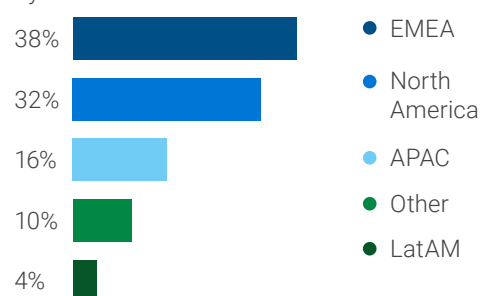
## Characteristics

### Geographical breakdown

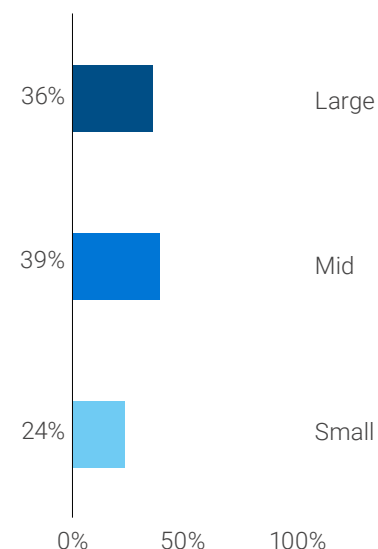
By domicile



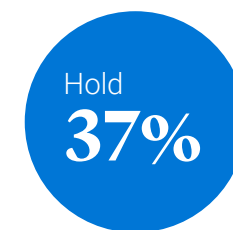
By revenue source



### Market cap breakdown



### Third party analyst stock consensus ratings\*\*



### Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 0.79    | 0.93    |
| Price/Sales    | 1.95    | 1.47    |
| BPS            | 12.13   | 11.93   |
| P/E Positive   | 25.51   | 31.27   |
| ROE            | 9.59    | 9.10    |
| Price/Book     | 2.20    | 2.39    |
|                |         |         |
| P/E (1y fwd)   | 38.84   | 36.96   |
| P/E (3y fwd)   | 22.41   | 32.43   |
| Sales (1y fwd) | 13,225  | 13,381  |
| Sales (3y fwd) | 14,631  | 13,263  |

### Constituents overlap

|                   |      |
|-------------------|------|
| S&P 500           | 2.5% |
| MSCI World        | 2.3% |
| Nasdaq 100        | 3.4% |
| Total stocks = 43 |      |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

Consensus ratings do not constitute a recommendation to buy or sell any security. The consensus ratings presented in this chart are not in relation to the L&G Thematic ETFs.

### Key risk

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# Clean Water

## Company spotlight

### Itron

Founded in 1977 in the US, Itron is a leading provider of devices and networked solutions such as IoT meters, sensors, smart networks, software and service solutions, to the global water and energy utilities industry. The firm delivers solutions that enable utilities and municipalities to operate critical infrastructure safely, reliably and efficiently. The company has sold more than 200 million communicating endpoints to approximately 8,000 customers in 100 countries.

Over a third of the company's revenues can be attributed to digital water solutions that span from advanced meter infrastructure and automated readings to AI- and data-driven insights. Examples of water-focused use cases offered by Itron include smart water distribution network management, combining networks and devices to manage leak detection, pressure management and water quality; leak sensors, helping to identify and repair leaks; and wastewater monitoring, remotely monitoring wastewater flow patterns to optimise system performance, mitigate pollution and improve public health.

Across meters, Itron has a significant share of the water, gas and electric meter markets in the Americas and EMEA, and is one of the largest suppliers of meters in the APAC market. Across networked solutions, Itron has a significant share in all segments of the market, with networked endpoints deployed in the water, electricity and gas markets, distributed automation and smart streetlight deployments.

In 2021 Itron expanded its smart city and IoT solutions with the acquisition of Smart Efficient Lighting Control from a subsidiary of Xylem, a pure-play water engineering portfolio member.

## Last quarter performance commentary

The Solactive Clean Water Index NTR returned +5.0% over the quarter.

The 2023 Global Water Summit was held in May in Berlin. The annual industry event focuses on new opportunities and developments in the sector, and one of the messages that came out of the event was the scale of investment that is going into clean water – the value of projects and investments being discussed at the Global Water Summit alone came to \$150 billion.

Spurred by the coming end of the Asset Management Period 8 (AMP8), UK water companies including Severn Trent and United Utilities bought £1bn of sustainable bonds to improve storm overflows, reduce nutrient pollution and tackle leaks. AMP8 was set by the UK industry regulator Ofwat; it starts in April 2025 and aims to increase efficiency and service levels within the English and Welsh water sector, improving supply chain resiliency. To protect water, the UK government also launched a consultation to propose unlimited penalties for water companies that commit pollution offenses.

The main contributors to performance were Core & Main (returned +35.7%), Advanced Drainage Systems (+35.3%) and Itron (+30.0%), while the main detractors were Lindsay Corp (-20.8%), Primo Water (-17.8%) and China Lesso (-22.9%), all from the technology and digital solutions segment. Water services distributor Core & Main delivered strong results and was involved in lots of M&A activity. It completed the acquisitions of UPSCO to leverage their utility infrastructure expertise and Midwest Pipe Supply to expand their drainage and waterworks solutions. Core & Main also announced the acquisition of Foster Supply to strengthen their waterworks and geosynthetics business and Jwd'Angelo to use their fire protection and waterworks products.

Source: LGIM, Bloomberg, Global Water Intelligence, as at 30 June 2023.

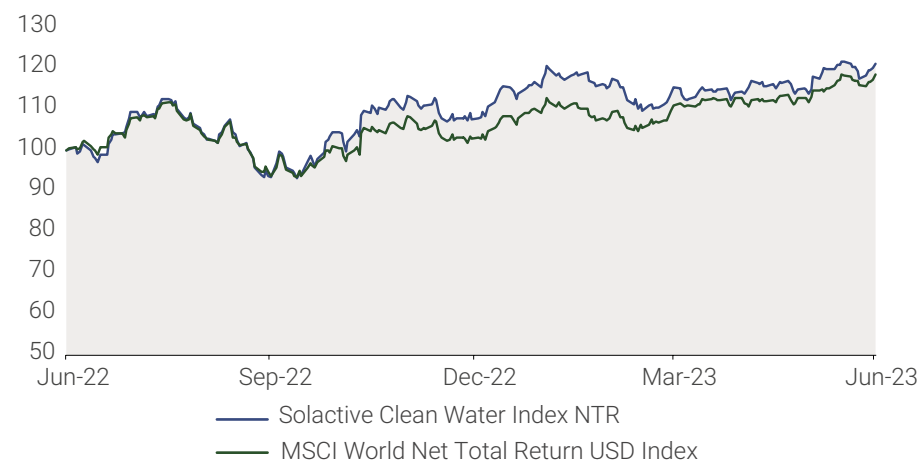
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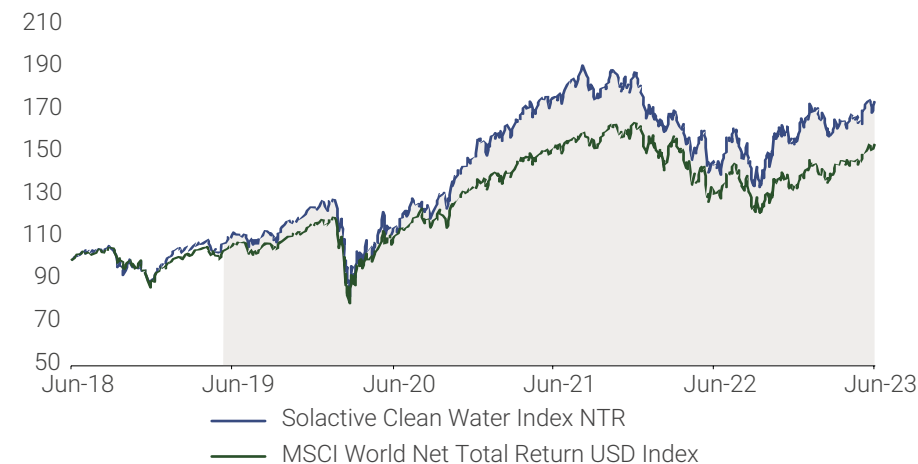
# Clean Water

## Performance

### Historical and simulated performance (1y)



### Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

### Index performance\*

| Index performance* | QtD     | 1 year  | 3 years | 5 years |
|--------------------|---------|---------|---------|---------|
| Cumulative Return  | 4.97%   | 21.09%  | 52.06%  | 74.32%  |
| Annualized Return  |         |         | 15.00%  | 11.75%  |
| Volatility         | 12.61%  | 18.59%  | 16.80%  | 19.97%  |
| Sharpe Ratio       | 170.50% | 113.52% | 89.28%  | 58.83%  |
| Max Drawdown       | -3.44%  | -17.11% | -29.87% | -36.00% |

### Index total return contribution (QtD)

| Top 5            |         | Bottom 5         |          |
|------------------|---------|------------------|----------|
| Core & Main In-A | ▲ 0.77% | Lindsay Corp     | ▼ -0.46% |
| Advanced Drainag | ▲ 0.75% | Primo Water Corp | ▼ -0.41% |
| Itron Inc        | ▲ 0.67% | China Lesso      | ▼ -0.41% |
| Bentley System-B | ▲ 0.60% | Pennon Grp Plc   | ▼ -0.39% |
| Zurn Elkay Water | ▲ 0.55% | Kurita Water Ind | ▼ -0.37% |

### Portfolio composition

| Latest Additions     | Latest Deletions     |
|----------------------|----------------------|
| no rebalancing in Q2 | no rebalancing in Q2 |

### Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | GLUG LN | ISIN                 | IE00BK5BC891 |
| TER                | 0.49%   | Inception date       | 02/07/2019   |
| Currency           | USD     | Index inception date | 07-Jun-19    |
| Securities lending | No      | Replication method   | Physical     |

### Key risk

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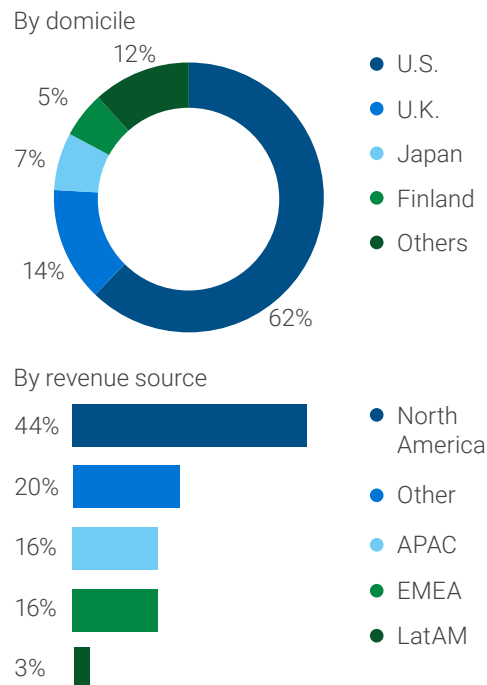




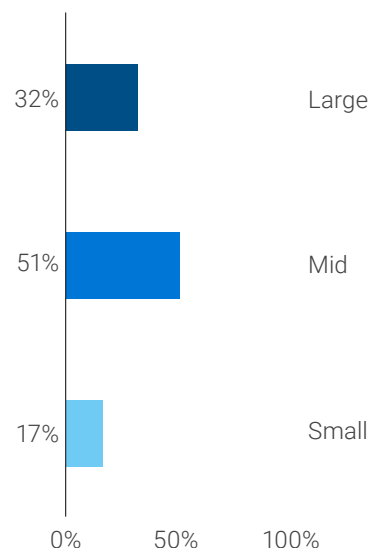
# Clean Water

## Characteristics

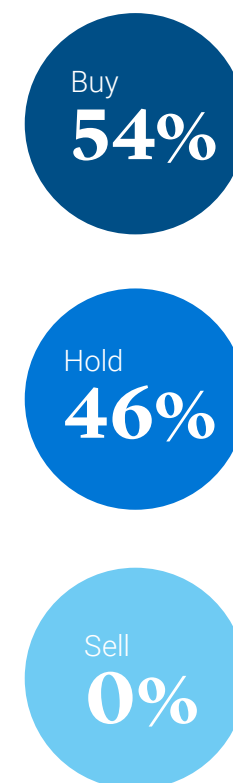
### Geographical breakdown



### Market cap breakdown



### Third party analyst stock consensus ratings\*\*



### Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 1.85    | 1.62    |
| Price/Sales    | 2.81    | 2.22    |
| BPS            | 16.33   | 14.22   |
| P/E Positive   | 26.58   | 24.51   |
| ROE            | 11.83   | 12.80   |
| Price/Book     | 3.00    | 2.90    |
|                |         |         |
| P/E (1y fwd)   | 31.40   | 24.07   |
| P/E (3y fwd)   | 24.38   | 21.88   |
| Sales (1y fwd) | 2,539   | 2,631   |
| Sales (3y fwd) | 2,886   | 2,222   |

### Constituents overlap

|                   |      |
|-------------------|------|
| S&P 500           | 0.6% |
| MSCI World        | 0.5% |
| Nasdaq 100        | 0.0% |
| Total stocks = 52 |      |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

Consensus ratings do not constitute a recommendation to buy or sell any security. The consensus ratings presented in this chart are not in relation to the L&G Thematic ETFs.

### Key risk

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# Cyber Security

## Company spotlight

### Darktrace

Darktrace is a UK-based company that initially started off in 2013 as a self-learning AI research centre created by mathematicians and cyber defence experts, and went public in 2021. In the centre, which hosts ~200 employees with qualifications such as master's degrees and doctorates in areas from astrophysics to linguistics and data science, 125 patents and pending applications were generated. The centre is focused on introducing new thresholds and innovations in AI-based cyber security solutions, and introduced the first at-scale deployment of AI in cyber security, being the pioneer of autonomous response technology. Darktrace is the only provider of self-learning AI that detects cyber threats not based on historical events.

Darktrace's products come under the four pillars of 'prevent, detect, respond and heal', and the company's Cyber AI Analyst investigates threats along the entire cycle and delivers human-readable reports.

The Prevent suite includes attack surface management (that typically reveals 30-50% more assets than an organisation realises it has), and end-to-end (that maps the internal pathways through which attacks can take place).

Detect analyses threats through AI and sends them to Respond, which autonomously disarms attacks when they occur. Heal restores affected assets and systems and helps security teams with decision marking.

Darktrace grew its customer base by 32% in FY 2022 and benefits from a large backlog of future revenues thanks to its multi-year subscriptions. The self-learning AI tool is deemed to be suitable for any kind of company size and industry and complementary to traditional security solutions. The company could also expand beyond cyber security to the broader enterprise AI market to grow in the future.

## Last quarter performance commentary

The ISE Cyber Security UCITS NTR Index returned +5.7% over the quarter.

International law enforcement agencies took down Genesis marketplace, popular with cybercriminals, and the FBI took down Snake, Russia's premier cyber-spying tool. The Securities and Exchange Commission in the US proposed a new rule to increase transparency and improve assessments of cyber-related risks in capital markets. The US and Europe issued a joint advisory to help organisations counter APT28, a threat group attributed to Russia's military intelligence.

Among the victims of cyber attacks in Q2 were the Swiss government and Japanese pharma giant Eisai. Technology firm Xplain, which provides IT services to the Swiss government, lost operational data that was then posted on the darknet as the ransom amount was not received. Eisai had a number of servers encrypted.

Cisco announced its third cyber security acquisition of 2023 with Armorblox. The acquisition should enable Cisco to use predictive and generative AI to enhance attack prediction, rapid threat detection and policy enforcement. Crosspoint Capital Partners announced the acquisition of Absolute Software, a provider of security solutions that offer visibility and control over devices, applications and network connections.

Akamai launched new products and upgrades to help customers face more sophisticated attacks and have more flexibility. Palo Alto introduced a cloud next-generation firewall to improve response and recovery in digital forensics and incident response situations for Microsoft Azure clients. BlackBerry and Cloudflare introduced new products that leverage AI.

The main contributors to performance were Palo Alto (returned +27.9%), Darktrace (+23.2%) and Blackberry (+21.3%). The main detractors were Fastly (-11.2%), Ziff Davis (-10.2%) and Juniper Networks (-8.3%).

Source: LGIM, Bloomberg, Nasdaq, as at 30 June 2023.

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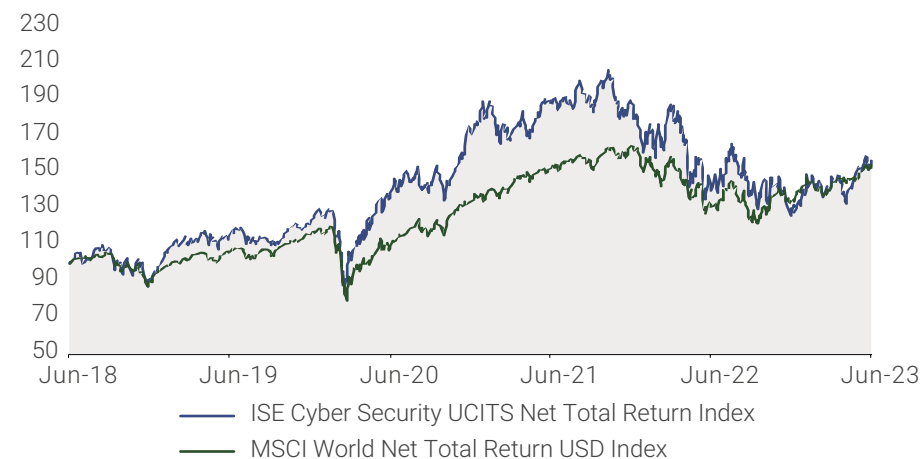
# Cyber Security

Performance

## Historical and simulated performance (1y)



## Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

## Index performance\*

| Index performance* | QtD     | 1 year  | 3 years | 5 years |
|--------------------|---------|---------|---------|---------|
| Cumulative Return  | 5.74%   | 11.66%  | 12.89%  | 56.31%  |
| Annualized Return  |         |         | 4.13%   | 9.34%   |
| Volatility         | 19.02%  | 27.05%  | 24.90%  | 25.17%  |
| Sharpe Ratio       | 132.14% | 43.12%  | 16.57%  | 37.10%  |
| Max Drawdown       | -10.57% | -23.72% | -38.67% | -38.67% |

## Index total return contribution (QtD)

| Top 5            |         | Bottom 5         |          |
|------------------|---------|------------------|----------|
| Palo Alto Networ | ▲ 1.14% | Fastly Inc -CI A | ▼ -0.60% |
| Darktrace Plc    | ▲ 0.95% | Ziff Davis Inc   | ▼ -0.49% |
| Blackberry Ltd   | ▲ 0.91% | Juniper Networks | ▼ -0.37% |
| Akamai Technolog | ▲ 0.63% | Sentinelone In-A | ▼ -0.26% |
| Fortinet Inc     | ▲ 0.60% | Onespan Inc      | ▼ -0.25% |

## Portfolio composition

| Latest additions   | Latest deletions       |
|--------------------|------------------------|
| no additions in Q2 | Sumo Logic             |
|                    | Telos                  |
|                    | Absolute Software Corp |

## Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | USPY LN | ISIN                 | IE00BYPLS672 |
| TER                | 0.69%   | Inception date       | 28/09/2015   |
| Currency           | USD     | Index inception date | 31-Aug-15    |
| Securities lending | No      | Replication method   | Physical     |

## Key risk

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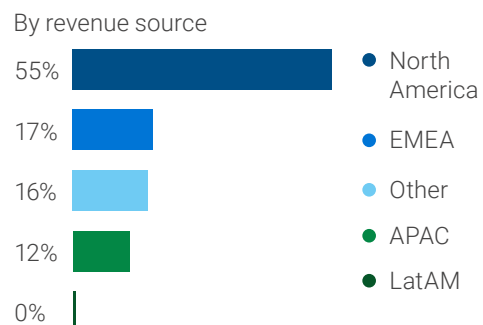
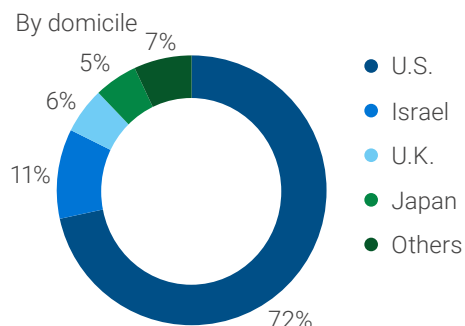




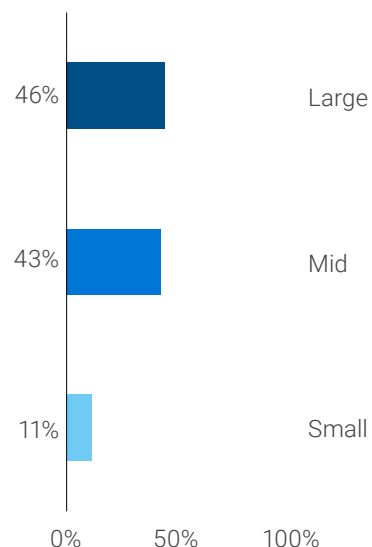
# Cyber Security

## Characteristics

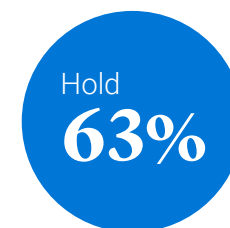
### Geographical breakdown



### Market cap breakdown



### Third party analyst stock consensus ratings\*\*



### Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 0.06    | 0.61    |
| Price/Sales    | 3.93    | 4.34    |
| BPS            | 6.25    | 8.22    |
| P/E Positive   | 26.03   | 26.15   |
| ROE            | 1.68    | 3.15    |
| Price/Book     | 4.36    | 3.95    |
|                |         |         |
| P/E (1y fwd)   | 34.00   | 25.49   |
| P/E (3y fwd)   | 27.65   | 24.12   |
| Sales (1y fwd) | 3,222   | 3,499   |
| Sales (3y fwd) | 3,229   | 3,078   |

### Constituents overlap

|                   |      |
|-------------------|------|
| S&P 500           | 1.0% |
| MSCI World        | 0.9% |
| Nasdaq 100        | 2.7% |
| Total stocks = 40 |      |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

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### Key risk

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# Digital Payments

## Company spotlight

### Shopify

Founded in Canada in 2006, Shopify operates a cloud-based commerce platform designed for small and medium-sized businesses. Its software is used by merchants to run their ecommerce businesses across all sales channels, including web, mobile storefronts, social media storefronts and brick-and-mortar shops. The company's platform provides merchants with a single view of business and customer activity and enables them to manage products and inventory, process orders and payments, and leverage analytics and reporting.

Across payments, the company operates Shopify Payments, a service that allows businesses to manage online transactions and accept payments. It is powered by Stripe, a global leader in online payments. The company also operates Shop Pay, an accelerated checkout solution introduced in 2017. Shop Pay securely stores the payment information customers enter on a store's checkout page and then autofills it on return visits. This allows for faster purchases and eliminates the need to re-enter billing and other details. Shop Pay also offers customers the option to pay for their order in instalments at checkout, both online and in store.

In April 2023, Shopify announced its partnership with Melio, a leading B2B payments platform for small businesses, to power Shopify Bill Pay, an accounts payable solution that is expected to transform how Shopify merchants pay and manage their business bills ([source](#)). Shopify Bill Pay enables merchants to pay bills with their preferred method (credit, bank or wire transfer), and allows them to choose the way in which the vendor receives the payment separately (check, bank or wire transfer).

During the quarter Shopify sold its logistics business to focus on its core e-commerce and payments platform.

## Last quarter performance commentary

The Solactive Digital Payments Index NTR returned +3.2% over the quarter.

Despite recession fears, consumer spending and the IT spending of banks were stable, and index companies engaged in M&A activity. Cross-border remittance app developer Remitly completed the acquisition of Rewire to expand its geographic and product footprint. In the employee benefits space, Edenred acquired Reward Gateway and the majority of GOintegro; payments

processor Fidelity National Information Services (FIS) acquired Bond Financial Technologies, a banking-as-a-service fintech; International Money Express completed the acquisition of LAN Holdings Corp Envios de Valores to expand its remittance services in Latin America and the Caribbean; and Pushpay was acquired by a consortium led by BGH Capital for \$1.4bn at a 12% premium.

The main contributors to performance were Network International (returned +61.4%), Shopify (+34.8%) and StoneCo (+33.5%). Network International posted good performance on the back of takeover interest at the start of the quarter. Shopify announced 2,000 job cuts to reduce the company's size by 20% and sold the logistics business it had launched to compete with Amazon to Flexport, a private provider of logistics software, to focus on its core e-commerce platform. In the earnings results, revenues and merchandise volume were stronger than expected and the company announced that it could reach free cash flow profitability this year. The main detractors were the pure-play payment technology provider Nuvei (-32.1%), following the announcement of disappointing results; payment gateway, processor and technology provider Yeahka (-24.9%); and card issuer and payment processor DLocal (-24.8%).

Source: LGIM, Bloomberg, Barclays Research, as at 30 June 2023.

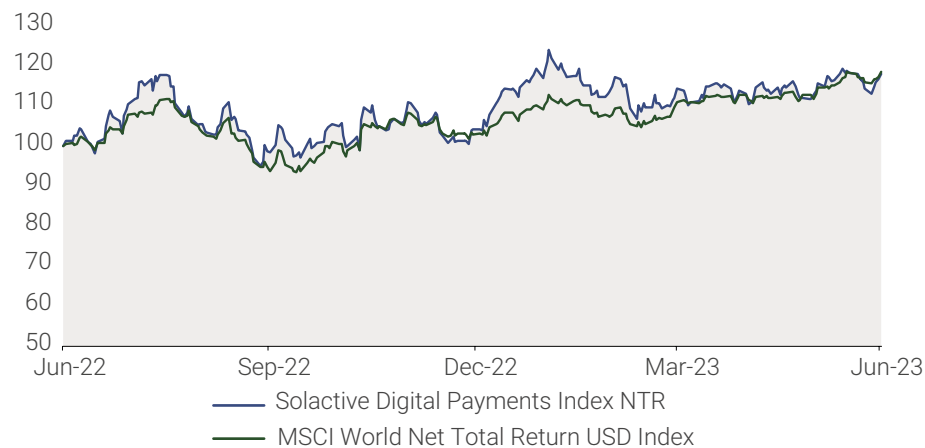
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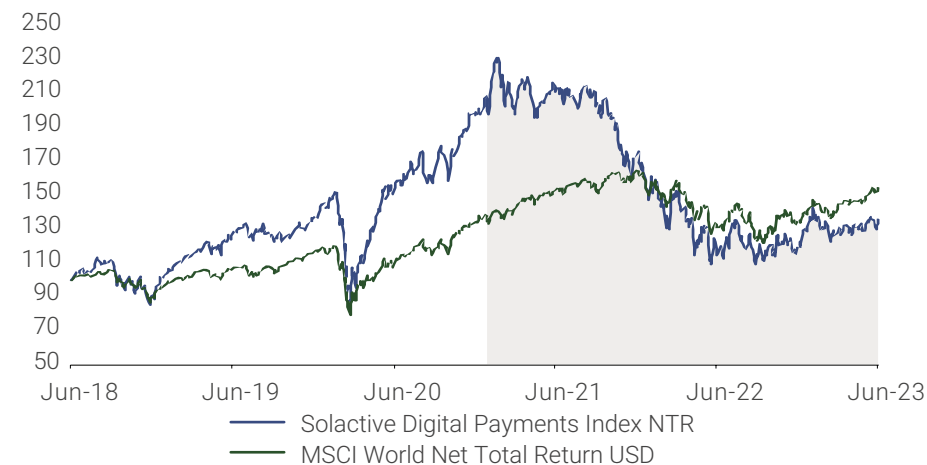
# Digital Payments

Performance

## Historical and simulated performance (1y)



## Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

## Index performance\*

| Index performance* | Qtd    | 1 year  | 3 years | 5 years |
|--------------------|--------|---------|---------|---------|
| Cumulative Return  | 3.17%  | 18.03%  | -11.05% | 35.48%  |
| Annualized Return  |        |         | -3.83%  | 6.26%   |
| Volatility         | 18.05% | 26.52%  | 26.14%  | 27.49%  |
| Sharpe Ratio       | 73.85% | 68.04%  | -14.66% | 22.76%  |
| Max Drawdown       | -5.25% | -19.35% | -52.89% | -52.89% |

## Index total return contribution (Qtd)

| Top 5            |         | Bottom 5         |          |
|------------------|---------|------------------|----------|
| Network Internat | ▲ 1.05% | Nuvei Corp-Sub V | ▼ -1.13% |
| Shopify Inc - A  | ▲ 1.00% | Yeahka Ltd       | ▼ -0.73% |
| Stoneco Ltd-A    | ▲ 0.73% | Dlocal Ltd       | ▼ -0.69% |
| Q2 Holdings Inc  | ▲ 0.58% | Payoneer Global  | ▼ -0.57% |
| Wise Plc - A     | ▲ 0.57% | Onespan Inc      | ▼ -0.47% |

## Portfolio composition

| Latest additions | Latest deletions            |
|------------------|-----------------------------|
| Zip              | Fiserv                      |
| Shift4 Payments  | International Money Express |

## Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | DPAY LN | ISIN                 | IE00BF92J153 |
| TER                | 0.49%   | Inception date       | 27/05/2021   |
| Currency           | USD     | Index inception date | 26-Jan-21    |
| Securities lending | No      | Replication method   | Physical     |

## Key risk

The value of an investment and any income taken from it is not guaranteed and can go down as well as up; You may not get back the amount you originally invested. Simulated and past performance is not a guide to the future. The above information does not constitute a recommendation to buy or sell any security.



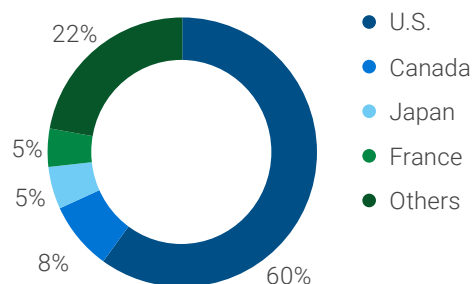


# Digital Payments

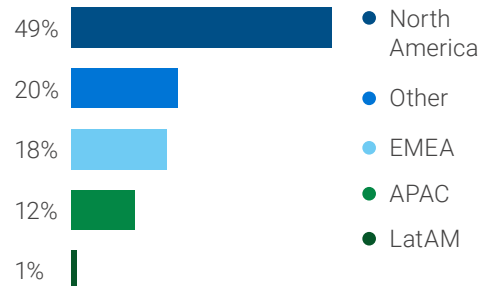
## Characteristics

### Geographical breakdown

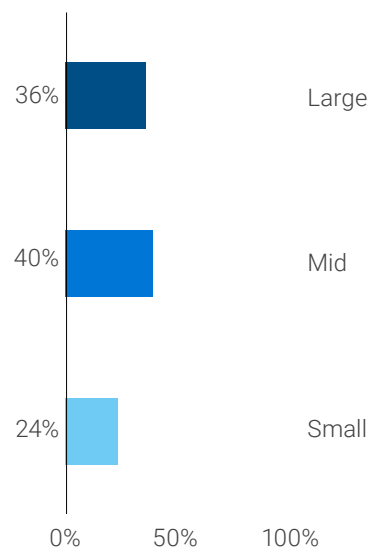
By domicile



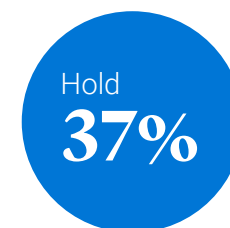
By revenue source



### Market cap breakdown



### Third party analyst stock consensus ratings\*\*



### Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 0.37    | 0.73    |
| Price/Sales    | 2.78    | 3.14    |
| BPS            | 7.86    | 9.92    |
| P/E Positive   | 33.63   | 30.23   |
| ROE            | 2.56    | 1.30    |
| Price/Book     | 3.03    | 2.62    |
| P/E (1y fwd)   | 41.29   | 22.29   |
| P/E (3y fwd)   | 23.54   | 22.12   |
| Sales (1y fwd) | 4,961   | 5,252   |
| Sales (3y fwd) | 5,696   | 4,992   |

### Constituents overlap

|                   |      |
|-------------------|------|
| S&P 500           | 2.7% |
| MSCI World        | 2.0% |
| Nasdaq 100        | 0.5% |
| Total stocks = 40 |      |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

Consensus ratings do not constitute a recommendation to buy or sell any security. The consensus ratings presented in this chart are not in relation to the L&G Thematic ETFs.

### Key risk

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# Ecommerce Logistics

## Company spotlight

### GXO Logistics

GXO Logistics (GXO) is the largest global pure-play logistics company and the second-largest contract logistics provider after DHL. It is headquartered in the US and was founded in August 2021 after completing a spin-off from the US-based transportation company XPO. GXO manages 885 warehouses, representing 210 million square feet of space in 27 different countries.

GXO's major end markets are driven by consumer and retail trends. A continued shift to outsource and automate supply chains is expected to keep driving growth in these key verticals and GXO also expects to take on additional market share by virtue of its unique scale and technology investments.

GXO is at the forefront of ecommerce logistics innovation. Research by Prologis indicates the adoption rate of warehouse automation is below 25% and facilities using more robotics are up to three times larger with contract terms 50% longer on average [source: JP Morgan Research, September 2021]. This presents a significant growth opportunity for GXO given the company's automation expertise. An example of GXO's innovative offerings is GXO Direct, a unique shared warehousing solution for onboarding high-growth customers, who can benefit from flexible

storage options. GXO Direct offers multiple customers across different verticals access to warehouse space, technology, and value-added services that include e-commerce shipping and returns.

Bolt-on acquisitions are also a key growth driver for GXO, with two transformative deals in 2015 and six acquisitions in total since 2008. A recent acquisition was the purchase of K+N's contract logistics business in the UK focused on food service, beverage, tech and e-commerce ([source](#)). The acquisition expanded GXO's contract logistics offering in the UK with complementary expertise, 75 facilities and a blue-chip customer base.

## Last quarter performance commentary

The Solactive eCommerce Logistics Index returned +2.2% over the quarter.

After the post-pandemic pressure seen on supply chains, logistics is still seen as a way for retailers to diversify their operations and build resilience. The results of a recent survey run by Transport Intelligence indicated that over 55% of respondents believed that online retailers would outsource more logistics functions over the next five years. Retailers are looking for investment and expertise to use platform IT solutions and automation in place of traditional

warehouse management and inventory solutions. On-demand warehousing, the ability to use warehousing services as and when required without the need for a long-term commitment, is also becoming more established.

Supply chains have started to observe the impact caused by El Niño. The level of water in the Panama Canal restricted ship movement and is expected to soon have a further impact on both trans-Pacific freight rates and logistics operations in the US, as well as on container shipping freight rates, increasing demand for alternative routes whose prices might be sustained. With fuel prices dropping but still high compared with 2021, inflation and high labour costs, road freight rates could remain elevated.

Kuehne+Nagel announced the acquisition of Morgan Cargo to enhance its perishables logistics services, and FedEx managed to deliver positive results despite a drop in volumes, thanks to its strategy to become more efficient and data-driven and control costs.

The main contributors to performance were Shopify (returned +34.8%) and logistics technology providers Manhattan Associates (+29.1%) and Oracle (+28.7%). The main detractors were fulfilment provider Zalando (-31.3%), digital customer experience platform provider Concentrix (-33.4%) and fulfilment provider Rakuten (-25.2%).

Source: LGIM, Bloomberg, Transport Intelligence Logistics, as at 30 June 2023.

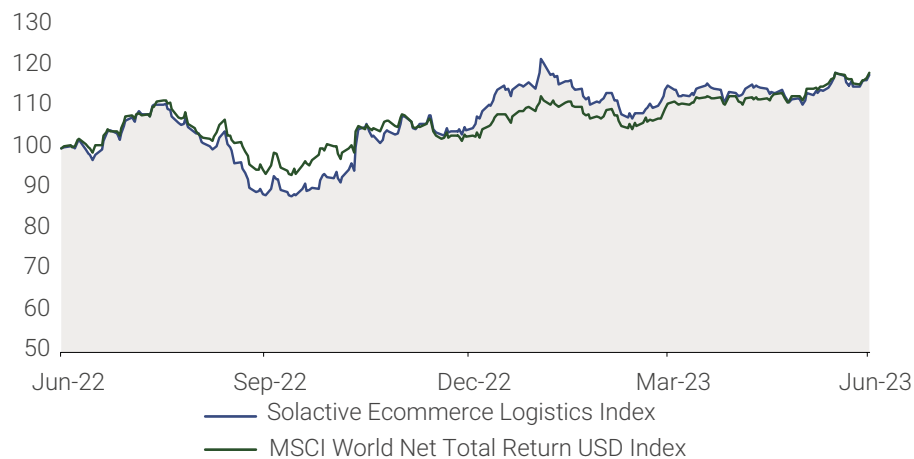
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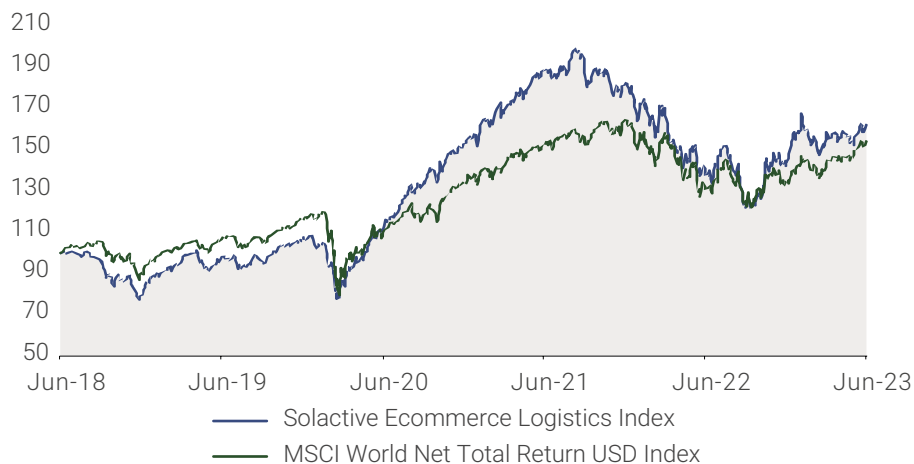
# Ecommerce Logistics

Performance

## Historical and simulated performance (1y)



## Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

## Index performance\*

| Index performance* | Qtd    | 1 year  | 3 years | 5 years |
|--------------------|--------|---------|---------|---------|
| Cumulative Return  | 2.20%  | 17.98%  | 46.37%  | 62.13%  |
| Annualized Return  |        |         | 13.55%  | 10.14%  |
| Volatility         | 12.45% | 19.39%  | 17.12%  | 17.45%  |
| Sharpe Ratio       | 73.14% | 92.76%  | 79.15%  | 58.12%  |
| Max Drawdown       | -4.40% | -20.56% | -39.20% | -39.20% |

## Index total return contribution (QtD)

| Top 5            |         | Bottom 5         |          |
|------------------|---------|------------------|----------|
| Shopify Inc - A  | ▲ 1.09% | Zalando Se       | ▼ -0.98% |
| Manhattan Assoc  | ▲ 0.84% | Concentrix Corp  | ▼ -0.94% |
| Oracle Corp      | ▲ 0.81% | Rakuten Group In | ▼ -0.73% |
| Sps Commerce Inc | ▲ 0.76% | Alibaba Grp-Adr  | ▼ -0.54% |
| Gxo Logistic     | ▲ 0.76% | Japan Post Holdi | ▼ -0.32% |

## Portfolio composition

| Latest additions     | Latest deletions |
|----------------------|------------------|
| Segro                | Kerry Logistics  |
| Mapletree Logistics  |                  |
| NTG Nordic Transport |                  |

## Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | ECOM LN | ISIN                 | IE00BF0M6N54 |
| TER                | 0.49%   | Inception date       | 23/01/2018   |
| Currency           | USD     | Index inception date | 03-Jan-18    |
| Securities lending | No      | Replication method   | Physical     |

## Key risk

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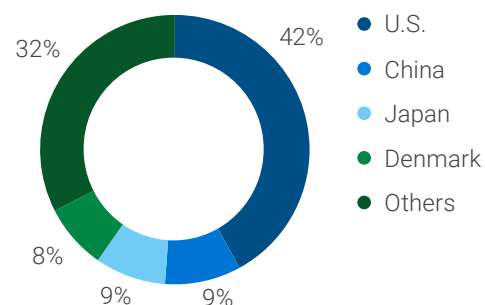


# Ecommerce Logistics

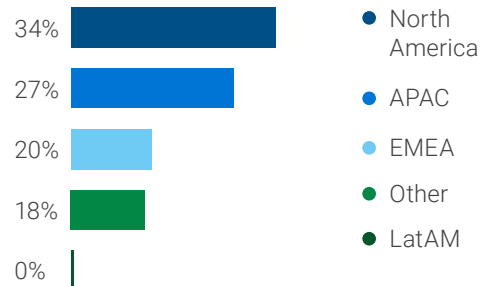
## Characteristics

### Geographical breakdown

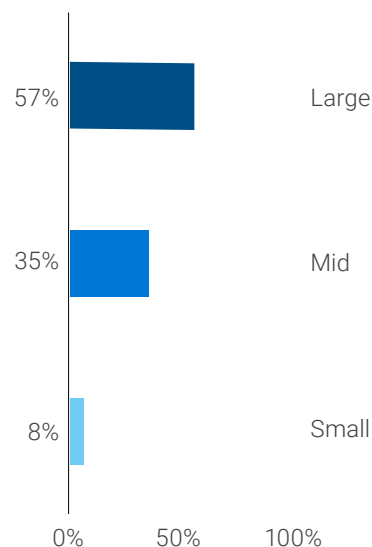
By domicile



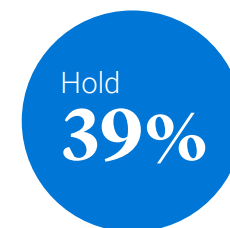
By revenue source



### Market cap breakdown



### Third party analyst stock consensus ratings\*\*



### Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 2.23    | 2.38    |
| Price/Sales    | 0.89    | 0.73    |
| BPS            | 15.06   | 13.79   |
| P/E Positive   | 14.95   | 12.86   |
| ROE            | 10.94   | 12.01   |
| Price/Book     | 2.39    | 2.44    |
|                |         |         |
| P/E (1y fwd)   | 28.22   | 28.26   |
| P/E (3y fwd)   | 14.01   | 15.66   |
| Sales (1y fwd) | 48,019  | 43,110  |
| Sales (3y fwd) | 56,211  | 51,915  |

### Constituents overlap

|                   |      |
|-------------------|------|
| S&P 500           | 5.1% |
| MSCI World        | 4.2% |
| Nasdaq 100        | 3.7% |
| Total stocks = 38 |      |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

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### Key risk

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# Emerging Cyber Security

## Company spotlight

### IonQ

Founded in 2015 in the US, IonQ is a pure-play leader in trapped ion quantum computing, one of the most advanced segments of cyber security. Trapped ion is one of the approaches to quantum computing, which uses electromagnetic fields and lasers to manipulate and analyse electrons. IonQ sells access to several quantum computers of various capacities and is in the process of researching and developing technologies for quantum computers with increasing computational capabilities. The company currently provides access to its quantum computers via three major cloud platforms, Amazon Web Services' Amazon Braket, Microsoft's Azure Quantum and Google's Cloud Marketplace, and also to select customers via its own cloud service. This cloud-based approach enables the broad availability of quantum computing as a service.

IonQ's quantum technology could prove critical in the fight against advanced cyber attacks. There are two main types of cryptography: private-key cryptography and public-key cryptography ([source](#)). Private key is thought to be generally safe from quantum computing. However, public key is a different matter, as it is strongly believed that quantum computers will be able to read such keys once commercialised. Encrypted

material that is stolen and downloaded today is still secure, but it could be deciphered in the future, potentially causing great damage.

The company's quantum protection opportunities have already been recognised by the US Air Force. In September 2022, IonQ secured a \$13.4m contract to supply the US Air Force Research Lab with access to its trapped ion systems ([source](#)), which have the potential to help the Air Force protect both public and private infrastructure in the United States.

## Last quarter performance commentary

The Solactive Emerging Cyber Security Index NTR returned +10.2% over the quarter.

A number of index components were rewarded for their leadership in different cyber security areas. Forrester Wave and IDC MarketScape named Cloudflare, whose current strategy is focused on achieving high-speed network efficiency, as a leader in enterprise email security and worldwide zero trust network access 2023 vendor assessment, and named Trend Micro as a leader in network analysis and visibility. Trend Micro also topped the global market share in the Cloud Workload Security market for the fifth consecutive year, according to IDC. This market grew by 27% from 2021 to 2022 due to soaring

demand for cloud workload security (source: IDC, May 2023). Aragon Research Globe named OneSpan as a leader in Digital Transaction Management.

The increased adoption of AI in cyber security solutions lifted performance over the quarter. Multi-cloud solution provider Rackspace Technology expanded its partnership with Google Cloud to accelerate the adoption of generative AI in every industry with Foundry for Generative AI by Rackspace (FAIR). Tenable integrated AI in its Identity Exposure tool that uses AI for identities and entitlement solutions, vulnerability and asset risk prioritisation.

The top performers over the quarter were the quantum computing, hardware security and data protection segments. On a stock-level basis, the main contributors to performance were IonQ (returned +120.0%) and the semiconductor manufacturers Renesas Electronics (+29.9%) and Broadcom (+35.9%), all from the emerging technologies / hardware segment. The main detractors came from the growth segment, and were cloud protection provider Fastly (-11.2%) and identification software providers OneSpan (-15.2%) and Okta (19.6-%).

Netscout launched Visibility Without Borders, a platform that secures applications to help enterprises in their digital transformation journeys.

Source: LGIM, Bloomberg, as at 30 June 2023.

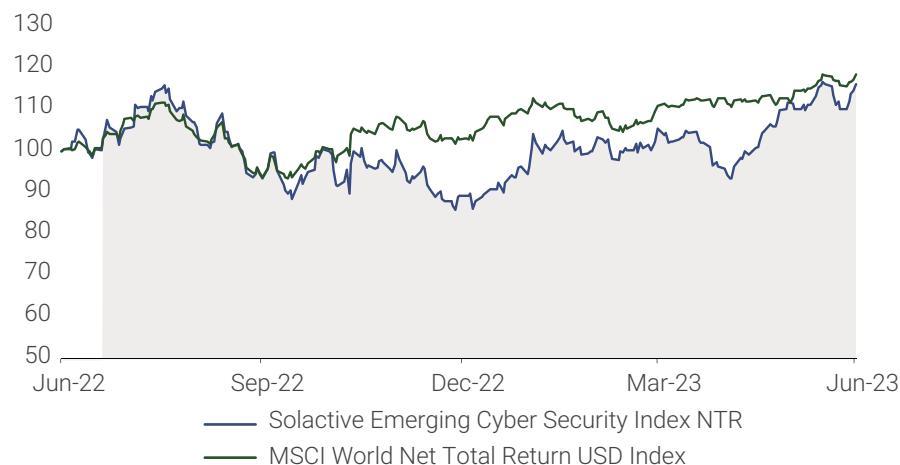
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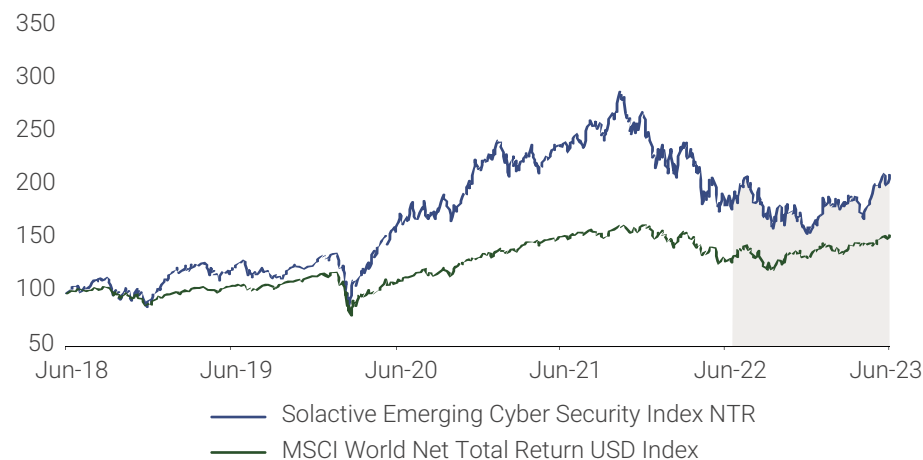
# Emerging Cyber Security

Performance

## Historical and simulated performance (1y)



## Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

## Index performance\*

| Index performance* | Qtd     | 1 year  | 3 years | 5 years |
|--------------------|---------|---------|---------|---------|
| Cumulative Return  | 10.18%  | 16.19%  | 30.47%  | 111.34% |
| Annualized Return  |         |         | 9.28%   | 16.14%  |
| Volatility         | 21.02%  | 29.46%  | 28.35%  | 29.07%  |
| Sharpe Ratio       | 226.18% | 54.99%  | 32.72%  | 55.51%  |
| Max Drawdown       | -11.40% | -25.88% | -46.08% | -46.08% |

## Index total return contribution (Qtd)

| Top 5            |         | Bottom 5         |          |
|------------------|---------|------------------|----------|
| Ionq Inc         | ▲ 3.65% | Fastly Inc -CI A | ▼ -0.58% |
| Renesas Electron | ▲ 1.06% | Onespan Inc      | ▼ -0.55% |
| Broadcom Inc     | ▲ 1.02% | Okta Inc         | ▼ -0.55% |
| Dell Techn-C     | ▲ 0.91% | Gb Group Plc     | ▼ -0.42% |
| Palo Alto Networ | ▲ 0.90% | Tenable Holdings | ▼ -0.30% |

## Portfolio composition

| Latest additions     | Latest deletions     |
|----------------------|----------------------|
| no rebalancing in Q2 | no rebalancing in Q2 |

## Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | ESPY LN | ISIN                 | IE000ST40PX8 |
| TER                | 0.49%   | Inception date       | 07/09/2022   |
| Currency           | USD     | Index inception date | 18-Jul-22    |
| Securities lending | No      | Replication method   | Physical     |

## Key risk

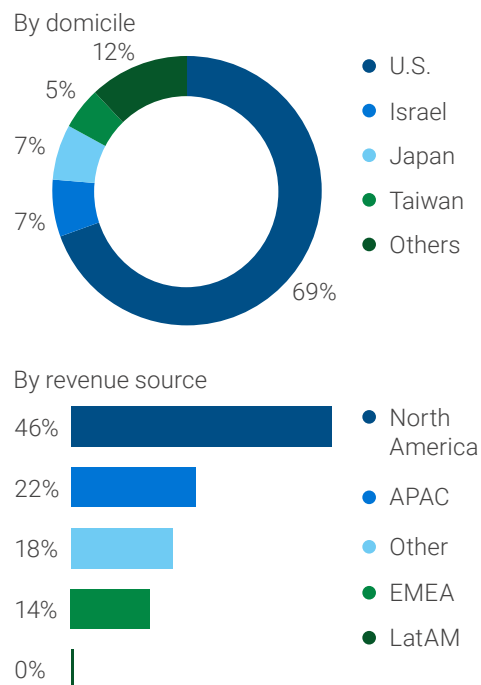
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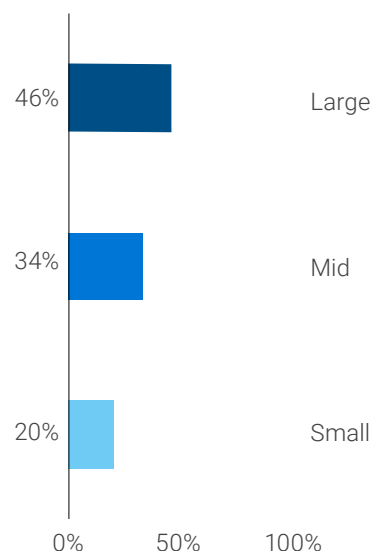
# Emerging Cyber Security

## Characteristics

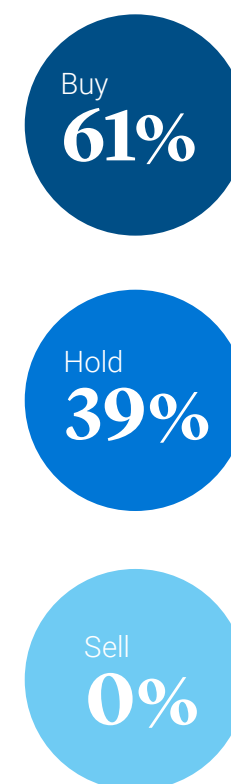
### Geographical breakdown



### Market cap breakdown



### Third party analyst stock consensus ratings\*\*



### Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 0.29    | 0.44    |
| Price/Sales    | 4.29    | 4.68    |
| BPS            | 5.54    | 5.56    |
| P/E Positive   | 27.15   | 25.09   |
| ROE            | 1.82    | 2.70    |
| Price/Book     | 4.70    | 3.98    |
|                |         |         |
| P/E (1y fwd)   | 41.39   | 25.92   |
| P/E (3y fwd)   | 25.98   | 25.43   |
| Sales (1y fwd) | 5,480   | 5,756   |
| Sales (3y fwd) | 6,573   | 5,708   |

### Constituents overlap

|                   |      |
|-------------------|------|
| S&P 500           | 2.1% |
| MSCI World        | 1.7% |
| Nasdaq 100        | 5.2% |
| Total stocks = 38 |      |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

Consensus ratings do not constitute a recommendation to buy or sell any security. The consensus ratings presented in this chart are not in relation to the L&G Thematic ETFs.

### Key risk

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# Global Thematic

## Last quarter performance commentary

The Solactive L&G Global Thematic Index NTR returned +3.2% over the quarter. The Index returned -2.6% in April, +1.4% in May and +4.4% in June.

In April, equity market sentiment was influenced by stress in the US around weakness in the banking sector and concerns on the debt ceiling, which triggered a flight to safety. However, volatility declined and performance picked up over the rest of the quarter. Companies reported on their Q1 earnings and delivered broadly positive sales and earnings surprises, with some weakness coming from financials. Global technology and communication services stocks continued to rally in a similar fashion to the rest of 2023.

In April, the L&G Emerging Cyber Security ESG Exclusions UCITS ETF and the L&G Artificial Intelligence UCITS ETF weighed most on performance. Both themes suffered a correction after a strong first quarter in 2023. Within the Artificial Intelligence theme, performance was hurt by weaker than expected outlooks and some reporting concerns around AI software developer c3.ai, which erased gains from the previous month. The L&G Clean Energy UCITS ETF and the L&G Battery Value-Chain UCITS ETF also detracted

from performance. Tesla announced further price cuts to stimulate demand and companies involved in the solar energy market were challenged by uncertainty around subsidy policies in the US. The L&G Pharma Breakthrough UCITS ETF contributed positively to performance, as biotech stocks benefitted from optimism around Merck's acquisition of biosciences company Prometheus at an 81% premium.

In May the main contributors to performance were the L&G Emerging Cyber Security ESG Exclusions UCITS ETF and the L&G Artificial Intelligence UCITS ETF. In line with strong performance in the technology sector, most stocks in the Emerging Cyber Security theme had positive returns. Quantum computing hardware and software company IonQ led performance by announcing stronger than expected Q1 2023 revenue growth. Stocks in the Artificial Intelligence theme also performed strongly, with the customer relationship management (CRM) software provider C3.ai returning +124.5% during the month, reflecting the market's strong interest in AI. The main detractors from performance were the L&G Healthcare Breakthrough UCITS ETF and the L&G Pharma Breakthrough UCITS ETF, on the back of idiosyncratic events such as news on M&As and treatment processes.

In line with performance over the entire quarter, in June the strongest returns came from the Battery Value-Chain theme, followed by the tech-based Emerging Cyber Security and Artificial Intelligence.

The themes that contributed the most to performance over the quarter were Emerging Cyber Security (the index returned +10.2%), Battery Value-Chain (+10.6%) and Artificial Intelligence (+11.0%), while Clean Energy (-3.2%) and Pharma Breakthrough (-3.4%) detracted the most.

On a stock-level basis, the main contributors to performance were Emerging Cyber Security component IonQ (returned +120.0%), Pharma Breakthrough component CTI BioPharma (+116.4%) and Clean Energy and Battery Value-Chain component Tesla (+26.2%). The main detractors were Pharma Breakthrough component Travelex Therapeutics (-28.2%), Ecommerce Logistics component Zalando (-31.3%) and Pharma Breakthrough component Emergent BioSolutions (-10.0%).

Source: LGIM, Bloomberg, as at 30 June 2023.

For illustrative purposes only. Reference to a particular security is on a historic basis and does not mean that the security is currently held or will be held within an LGIM portfolio. The above information does not constitute a recommendation to buy or sell any security. Past performance is not a guide to the future. Capital at risk.



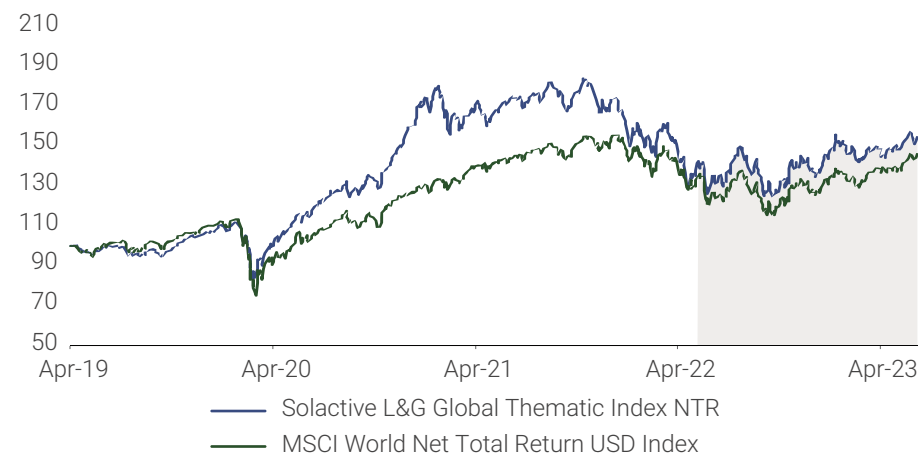
# Global Thematic

## Performance

### Historical and simulated performance (1y)



### Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

### Index performance\*

| Index performance* | QtD     | 1 year  | 3 years |
|--------------------|---------|---------|---------|
| Cumulative Return  | 3.16%   | 18.32%  | 33.33%  |
| Annualized Return  |         |         | 10.07%  |
| Volatility         | 12.13%  | 18.64%  | 17.99%  |
| Sharpe Ratio       | 109.62% | 98.39%  | 55.99%  |
| Max Drawdown       | -4.19%  | -17.78% | -32.55% |

### Index total return contribution (QtD)

| Top 5            |         | Bottom 5         |          |
|------------------|---------|------------------|----------|
| Ionq Inc         | ▲ 0.44% | Travere Therapeu | ▼ -0.17% |
| Cti Biopharma Co | ▲ 0.38% | Zalando Se       | ▼ -0.16% |
| Tesla Inc        | ▲ 0.36% | Emergent Biosolu | ▼ -0.15% |
| Panasonic Holdin | ▲ 0.21% | Solaredge Techno | ▼ -0.14% |
| Energys          | ▲ 0.20% | Innovent Biologi | ▼ -0.12% |

### Portfolio composition

| Latest additions                 | Latest deletions                 |
|----------------------------------|----------------------------------|
| full list available upon request | full list available upon request |

### Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | THMZ LN | ISIN                 | IE000VTOHNZ0 |
| TER                | 0.6%    | Inception date       | 07/09/2022   |
| Currency           | USD     | Index inception date | 30-May-22    |
| Securities lending | No      | Replication method   | Physical     |

### Key risk

The value of an investment and any income taken from it is not guaranteed and can go down as well as up; You may not get back the amount you originally invested. Simulated and past performance is not a guide to the future. The above information does not constitute a recommendation to buy or sell any security.

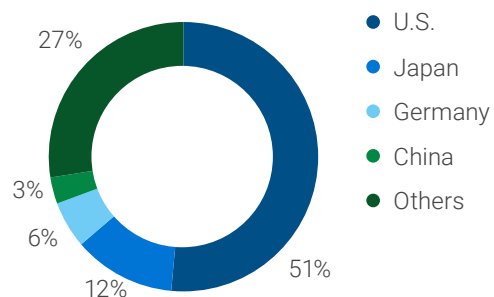


# Global Thematic

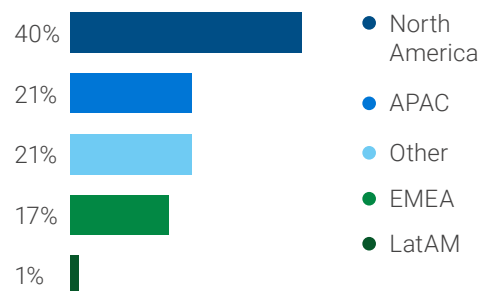
## Characteristics

### Geographical breakdown

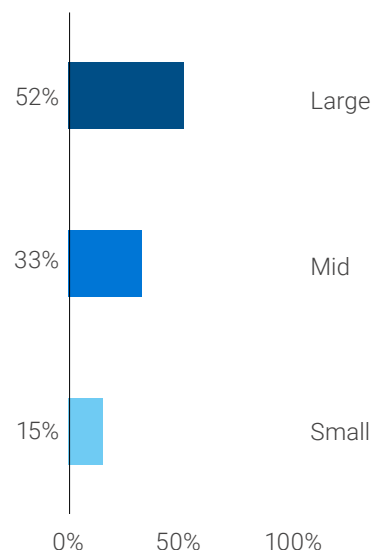
By domicile



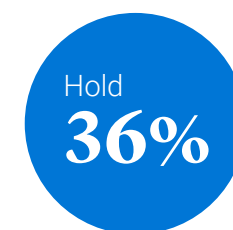
By revenue source



### Market cap breakdown



### Third party analyst stock consensus ratings\*\*



### Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 1.31    | 1.15    |
| Price/Sales    | 3.46    | 3.52    |
| BPS            | 13.98   | 13.39   |
| P/E Positive   | 26.82   | 23.54   |
| ROE            | 10.09   | 9.90    |
| Price/Book     | 3.44    | 3.31    |
| P/E (1y fwd)   | 37.26   | 32.73   |
| P/E (3y fwd)   | 24.47   | 24.13   |
| Sales (1y fwd) | 11,930  | 12,688  |
| Sales (3y fwd) | 15,578  | 14,332  |

### Constituents overlap

|                    |       |
|--------------------|-------|
| S&P 500            | 11.4% |
| MSCI World         | 13.1% |
| Nasdaq 100         | 9.3%  |
| Total stocks = 375 |       |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

Consensus ratings do not constitute a recommendation to buy or sell any security. The consensus ratings presented in this chart are not in relation to the L&G Thematic ETFs.

### Key risk

The value of an investment and any income taken from it is not guaranteed and can go down as well as up; You may not get back the amount you originally invested.



# Healthcare Technology

## Company spotlight

### Tactile Systems

Tactile Systems focuses on bettering the standard of care when treating underserved chronic diseases in a home setting. The company introduced a system to address the many limitations of self-administered home-based manual lymphatic drainage therapy. Its areas of therapeutic focus are vascular diseases, with a goal of advancing the standard of care in treating lymphedema and chronic venous insufficiency; oncology, in which lymphedema is a common consequence among cancer survivors; and providing airway clearance therapies for those suffering from chronic respiratory conditions. Tactile Systems' current lymphedema products are the Flexitouch and Entre systems and its airway clearance product is the AffloVest.

Tactile Systems has outperformed peers with a strong rally starting in November 2022 and the market has increased its expectations of the company given the higher market valuation. The firm's latest numbers are supportive of a further re-rating, especially with management's revised FY 2023 guidance numbers. TCMD is building momentum across its key markets. The AffloVest segment, projected to grow 18-21% this year, is of specific interest. Management upgraded FY 2023 guidance after a strong start to the year.

Guidance implies \$285-298 million in top-line revenues and earnings of \$33 million versus \$6 million last year. Top-line revenue growth of 23% was a pleasant surprise, reaching \$58.8 million. Growth was underlined by upside in both the lymphedema and AffloVest lines. Lymphedema sales, including the Flexitouch and Entre systems, added 22% year-on-year to reach \$48.9 million. The firm is also investing heavily in its sales force in the lymphedema segment, holding a headcount of 250 reps in Q1, up 5% since last year.

## Last quarter performance commentary

The ROBO Global Healthcare Technology and Innovation Index returned +1.0% over the quarter.

Investor interest in healthcare appears jaded after years of COVID disruptions, and healthcare equities have been underperforming, along with some of the largest healthcare companies seeing a sharp reversal after a strong two years led by health insurers which have recently warned of an uptick in medical costs attributed to pandemic-postponed procedures.

This may bode well for many of the index members going into the second half of 2023, with companies predominantly exposed to cutting-edge technologies in medical devices, lab process automation, and

multiple healthcare areas of innovation including cancer, chronic and genetic diseases, diagnostics, and medical instruments. The acceleration in elective procedures could benefit companies across orthopaedic (Smith & Nephew and), cardiovascular (Abiomed, Edwards, Boston Scientific), ophthalmologic (Staar Surgical), spinal cord (Globus Medical), broader general surgery innovations (Integra – soft tissue reconstruction), and Robotic Surgery players such as Intuitive Surgical and Stryker.

Subsector performance YTD has been mixed, with the largest subsector Medical Instruments, which accounts for 26% of the index, posting a decent 13.4% return led by companies such as Tactile Systems (+117% YTD, yet market cap is ~60% off pre-COVID levels).

The main contributors to performance were the biotech company Guardant Health (returned +52.7%), the surgical systems provider Intuitive Surgical (+33.9%) and the medical devices company Tactile Systems (+51.8%).

The main detractors were diagnostics tool provider NanoString Technologies (returned -59.1%), surgery equipment provider Integra LifeSciences (-28.4%) and drug technology provider Catalent (-34.0%).

Source: LGIM, Bloomberg, ROBO Global®, as at 30 June 2023.

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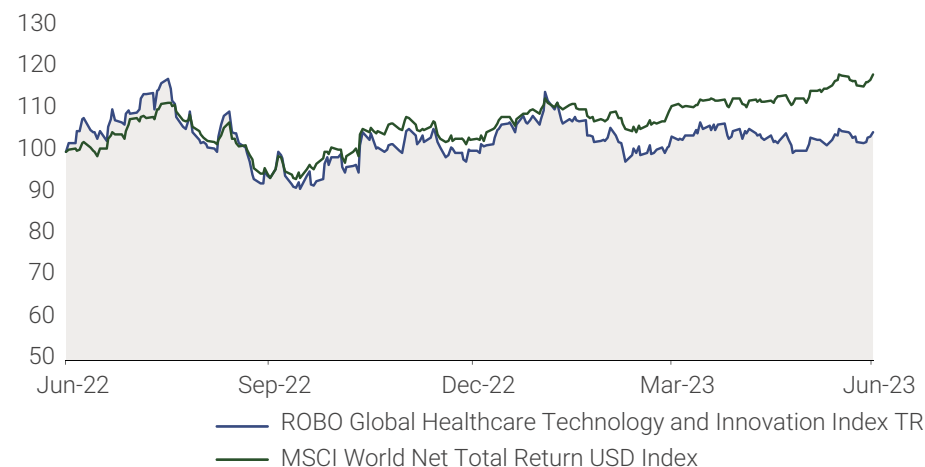




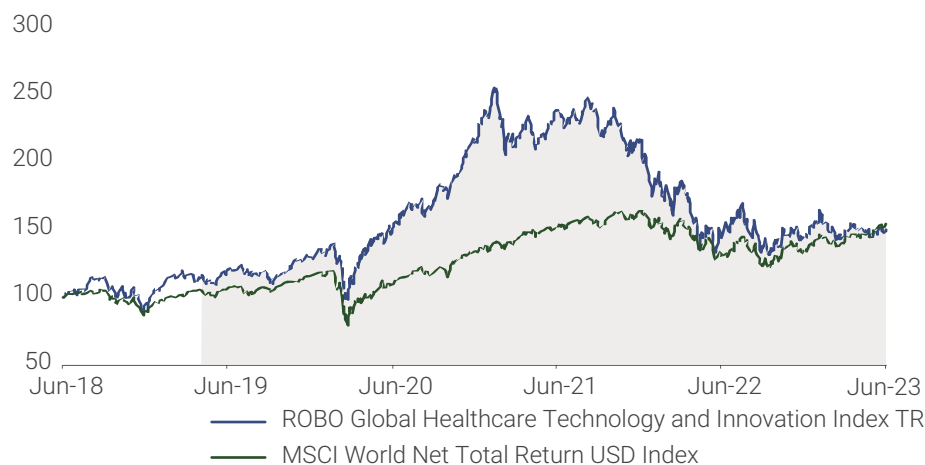
# Healthcare Technology

Performance

## Historical and simulated performance (1y)



## Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

## Index performance\*

| Index performance* | Qtd    | 1 year  | 3 years | 5 years |
|--------------------|--------|---------|---------|---------|
| Cumulative Return  | 1.02%  | 4.64%   | 0.01%   | 51.01%  |
| Annualized Return  |        |         | 0.00%   | 8.59%   |
| Volatility         | 16.52% | 26.06%  | 25.71%  | 25.79%  |
| Sharpe Ratio       | 25.25% | 17.82%  | 0.01%   | 33.31%  |
| Max Drawdown       | -6.75% | -22.45% | -48.53% | -48.53% |

## Index total return contribution (Qtd)

| Top 5            |         | Bottom 5         |          |
|------------------|---------|------------------|----------|
| Guardant Health  | ▲ 0.58% | Nanostring Techn | ▼ -0.67% |
| Intuitive Surgic | ▲ 0.58% | Integra Lifescie | ▼ -0.45% |
| Tactile Systems  | ▲ 0.58% | Catalent Inc     | ▼ -0.42% |
| Arrowhead Pharma | ▲ 0.49% | Nevro Corp       | ▼ -0.38% |
| Exact Sciences   | ▲ 0.48% | Codexis Inc      | ▼ -0.35% |

## Portfolio composition

| Latest additions   | Latest deletions    |                         |
|--------------------|---------------------|-------------------------|
| no additions in Q2 | Arrowhead Pharma    | Fate Therapeutics       |
|                    | Catalent            | Nanostring Technologies |
|                    | Crispr Therapeutics | Materialise NV          |
|                    | Editas Medicine     |                         |

## Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | DOCT LN | ISIN                 | IE00BK5BC677 |
| TER                | 0.49%   | Inception date       | 02/07/2019   |
| Currency           | USD     | Index inception date | 01-May-19    |
| Securities lending | No      | Replication method   | Physical     |

## Key risk

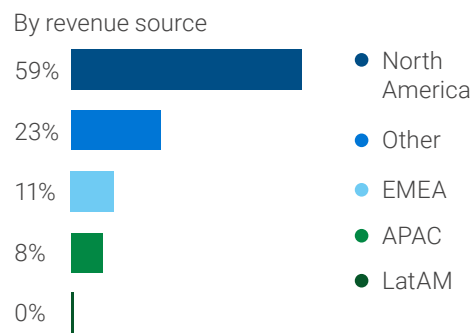
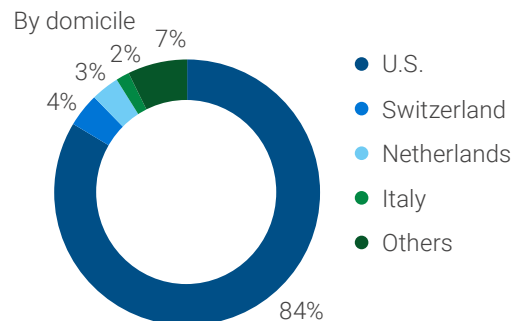
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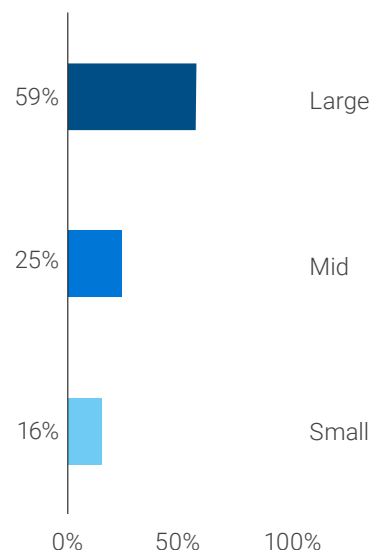
# Healthcare Technology

## Characteristics

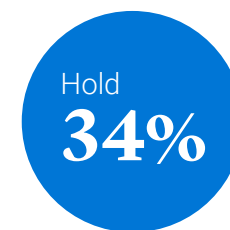
### Geographical breakdown



### Market cap breakdown



### Third party analyst stock consensus ratings\*\*



### Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 1.54    | 1.40    |
| Price/Sales    | 4.29    | 4.38    |
| BPS            | 18.04   | 17.35   |
| P/E Positive   | 32.38   | 28.82   |
| ROE            | 6.07    | 8.37    |
| Price/Book     | 3.55    | 3.94    |
|                |         |         |
| P/E (1y fwd)   | 37.71   | 38.34   |
| P/E (3y fwd)   | 24.72   | 24.07   |
| Sales (1y fwd) | 6,034   | 5,365   |
| Sales (3y fwd) | 7,540   | 7,078   |

### Constituents overlap

|                   |      |
|-------------------|------|
| S&P 500           | 4.4% |
| MSCI World        | 3.7% |
| Nasdaq 100        | 3.2% |
| Total stocks = 70 |      |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

Consensus ratings do not constitute a recommendation to buy or sell any security. The consensus ratings presented in this chart are not in relation to the L&G Thematic ETFs.

### Key risk

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# Hydrogen Economy

## Company spotlight

### Industrie De Nora

Industrie De Nora (De Nora) is a global electrochemical solutions and sustainable technologies provider, headquartered in Italy. Founded in 1923, it is present in 26 locations across 12 countries, with five R&D centres that ensure continual improvement and enlargement of its proprietary technologies covered by about 260 patent families. Leveraging its established market-leading position in metal-coated electrode technologies, De Nora is emerging as a key enabler of the green hydrogen economy, the next critical pillar of its growth strategy.

The company's green hydrogen production solutions fall under its Energy Transition business segment, which as of 2022, makes up 5% of its total annual sales. Researchers from BofA expect the Energy Transition segment to grow and cover ~40% of sales by 2025 [source: BofA Global Research].

The company's broad production portfolio for hydrogen solution includes the provision of electrodes and cells for alkaline water electrolysis (AWE) and electrodes for fuel cells, already available to the market, but also small electrolyser units, and other R&D initiatives such as the potential expansion into the

AEM electrodes market, PEM components, transport and storage for hydrogen and carbon utilisation.

De Nora's commitment to the hydrogen movement is further solidified via its partnerships with industry leaders. In October 2022, De Nora signed a partnership with Green Energy Storage (GES) for the realisation of a testing, development and optimisation platform for the prototype of a hydrogen battery ([source](#)).

De Nora also owns a 34% stake in Nucera, a JV with the German industrial engineering conglomerate Thyssenkrupp, which offers large-scale electrolysis technologies among other solutions, established in September 2022 ([source](#)).

## Last quarter performance commentary

The Solactive Hydrogen Economy Index NTR returned -0.7% over the quarter.

The US released the National Clean Hydrogen Strategy and Roadmap, which details how the country could produce 10 million tons (mmt) of green hydrogen annually by 2030 and 50mmt annually by 2050. The strategy targets strategic end uses in sectors that are difficult to electrify, aims to produce green hydrogen at a \$2/kg by 2026, and focuses on infrastructure

development. This follows the \$3/kg credit for H<sub>2</sub> production from the Inflation Reduction Act and a \$8bn investment from the Infrastructure and Investment Act. The EU Commission approved the Delegated Acts on Renewable Hydrogen, to provide clarity to investors, as the EU aims to reach 10mmt of domestic renewable hydrogen production and 10mmt of imported renewable hydrogen by 2030 in line with REPowerEU. Japan, the first country in the world to release a national hydrogen strategy in 2017, announced a \$107bn investment in hydrogen supply over 15 years, to boost hydrogen supply to 12mmt per year by 2040. South Korea passed legislation to install fuel cells at gas stations, to foster a more sustainable and environmentally conscious approach to power generation.

Toyota announced a potential 50% cost reduction from its next generation fuel cell, which is a significant milestone for the use of hydrogen in automotive applications, and Air Liquide and Groupe ADP announced the creation of Hydrogen Airport, the first engineering and consulting JV that strives to integrate hydrogen projects within airports infrastructures.

The main contributors to performance were Chemours (returned +24.3%), Nippon Sanso (+20.2%) and Toyota Motor (+13.0%). The main detractors were Ballard Power (-21.7%), FuelCell Energy (-24.2%) and Doosan Fuel Cell (-15.4%).

Source: LGIM, Bloomberg, as at 30 June 2023.

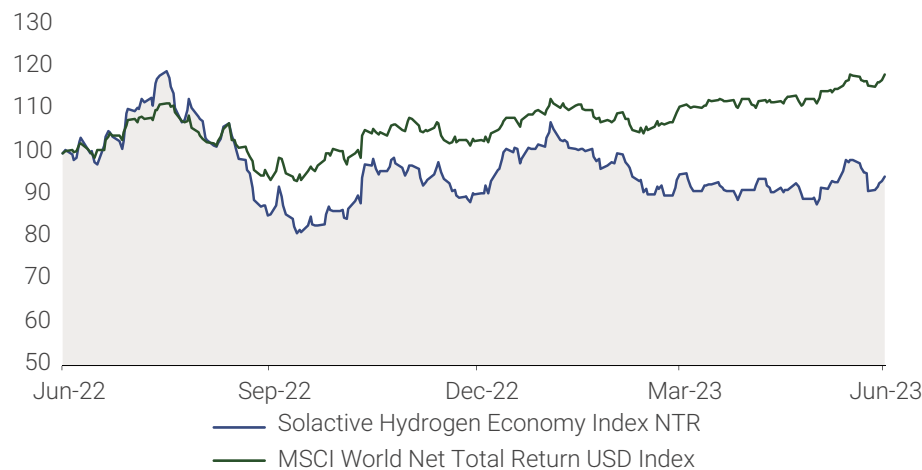
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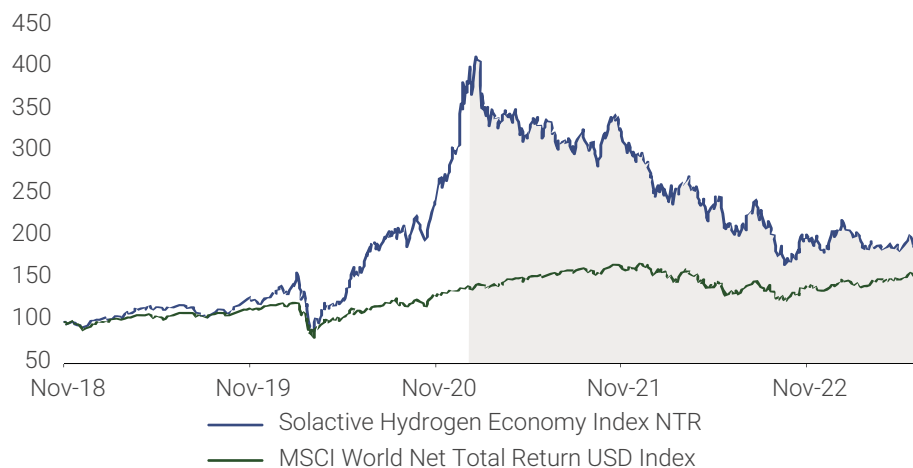
# Hydrogen Economy

Performance

## Historical and simulated performance (1y)



## Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

## Index performance\*

| Index performance* | QTD     | 1 year  | 3 years |
|--------------------|---------|---------|---------|
| Cumulative Return  | -0.71%  | -5.55%  | 17.14%  |
| Annualized Return  |         |         | 5.42%   |
| Volatility         | 19.45%  | 26.78%  | 29.26%  |
| Sharpe Ratio       | -14.40% | -20.73% | 18.52%  |
| Max Drawdown       | -7.67%  | -31.96% | -59.85% |

## Index total return contribution (QTD)

| Top 5            |         | Bottom 5         |          |
|------------------|---------|------------------|----------|
| Chemours Co      | ▲ 1.19% | Ballard Power    | ▼ -0.92% |
| Nippon Sanso Hol | ▲ 1.05% | Fuelcell Energy  | ▼ -0.84% |
| Toyota Motor     | ▲ 0.64% | Doosan Fuel Cell | ▼ -0.82% |
| Hyundai Motor    | ▲ 0.61% | Bloom Energy C-A | ▼ -0.61% |
| Orsted A/S       | ▲ 0.48% | Weichai Power-H  | ▼ -0.54% |

## Portfolio composition

| Latest additions                   | Latest deletions |
|------------------------------------|------------------|
| Industrie De Nora<br>Aker Horizons | McPhy Energy     |

## Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | HTWO LN | ISIN                 | IE00BMYDM794 |
| TER                | 0.49%   | Inception date       | 10/02/2021   |
| Currency           | USD     | Index inception date | 26-Jan-21    |
| Securities lending | No      | Replication method   | Physical     |

## Key risk

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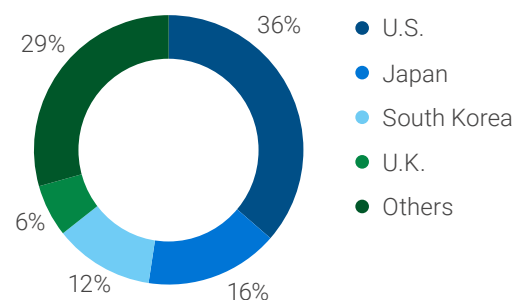


# Hydrogen Economy

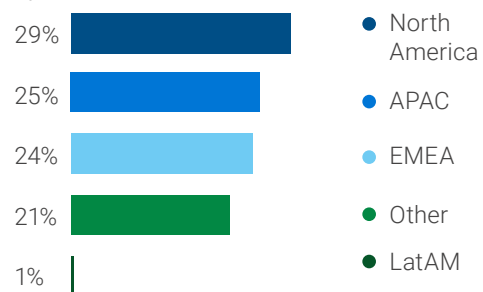
## Characteristics

### Geographical breakdown

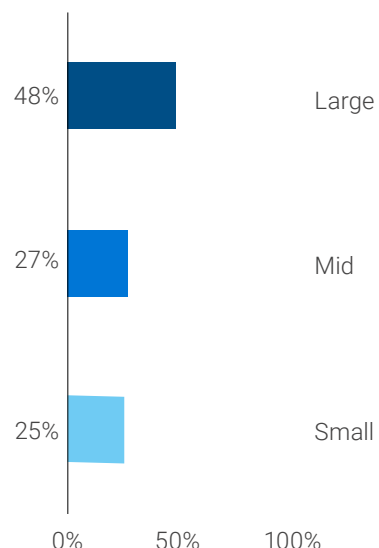
By domicile



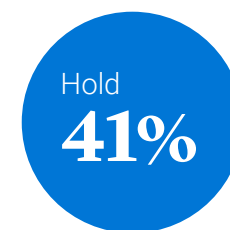
By revenue source



### Market cap breakdown



### Third party analyst stock consensus ratings\*\*



### Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 0.13    | 0.16    |
| Price/Sales    | 2.84    | 3.71    |
| BPS            | 6.61    | 7.80    |
| P/E Positive   | 20.13   | 16.80   |
| ROE            | 6.77    | 6.71    |
| Price/Book     | 1.87    | 2.21    |
|                |         |         |
| P/E (1y fwd)   | 24.74   | 15.40   |
| P/E (3y fwd)   | 19.86   | 19.13   |
| Sales (1y fwd) | 25,474  | 25,162  |
| Sales (3y fwd) | 22,827  | 21,119  |

### Constituents overlap

|                   |      |
|-------------------|------|
| S&P 500           | 0.8% |
| MSCI World        | 1.1% |
| Nasdaq 100        | 0.0% |
| Total stocks = 27 |      |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

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### Key risk

The value of an investment and any income taken from it is not guaranteed and can go down as well as up; You may not get back the amount you originally invested.



# Optical Technology & Photonics

## Company spotlight

### Lightwave Logic

Lightwave Logic is a US-based company whose proprietary technology platform is used to develop next-generation electro-optic polymers that increase the efficiency of internet infrastructure by converting data into optical signals, allowing more data to be transmitted at significantly higher speeds and with less power than existing solutions.

The company's current focus is on the datacom and telecommunications hardware supply chain for the 100 Gbps and 400 Gbps fiber optics communications market, seeking to integrate its proprietary materials into the devices that comprise key components in today's internet infrastructure. Lightwave Logic's unique value proposition has driven several potential strategic partners in the data and telecommunications markets to evaluate its technology for use in their devices, validating the demand for the company's solution in the marketplace. The company expects to introduce its technology, which is currently in development phase, into the commercial marketplace in the near future.

Lightwave Logic's R&D efforts since being founded in 1991 have yielded it an extensive patent portfolio and proprietary knowledge. The company ramped up its

patent acquisition efforts significantly in 2021. As of 2022, the patent portfolio consisted of 66 granted patents that include 52 from the US, one from Canada, six from the EU, two from Japan and three from China ([source](#)).

In 2018, Lightwave Logic acquired the polymer technology intellectual property assets of BrPhotonics Productos Optoelectrónicos, a Brazilian electronic components manufacturer, which significantly advanced its patent portfolio. In 2022, the company acquired the intellectual property assets of Chromosol, a UK silicon photonic technology developer, further strengthening its polymer technology offerings.

## Last quarter performance commentary

The Solactive EPIC Optical Technology & Photonics Index NTR returned +3.0% over the quarter.

The sensor and light technology provider ams-OSRAM introduced its third generation of OSLON automotive LEDs, targeted to increase energy efficiency, with multiple versions for design flexibility. Hamamatsu Photonics KK developed the light modulator with the world's highest power handling capability. Expected to be commercialised at the end of the year, it can optimise production efficiency in 3D printing or laser metal welding and cutting applications.

Within medical applications, Jenoptik opened a medical centre in Berlin that leverages semiconductors and electronics to manufacture optical components that will assist intraoral scanners and robot-assisted surgery. At the LASER World of PHOTONICS industry fair it also launched a new lens that can be used for biophotonics (the study of optical processes in biological systems), laser production, optoelectronics, data transmission and imaging. At the same fair, IPG Photonics presented a new laser solution that could improve the energy efficiency of some aspects of EV battery manufacturing processes.

The main contributors to performance were pure players nLight (returned +51.5%), the US laser manufacturer that reported a strong uptick in revenues and gross margin for the quarter, Nikon (+26.1%), from the consumer products segment, and Lightwave Logic (+33.3%), from the industrial products category, which announced a new patent for an advanced chemical structure design that improves material performance optical devices. The main detractors were the sensor manufacturer FARO Technologies (-34.2%), the laser manufacturer Desktop Metal (-23.0%) and Carl Zeiss Meditec (-22.3%) from the healthcare category.

Source: LGIM, Bloomberg, as at 30 June 2023.

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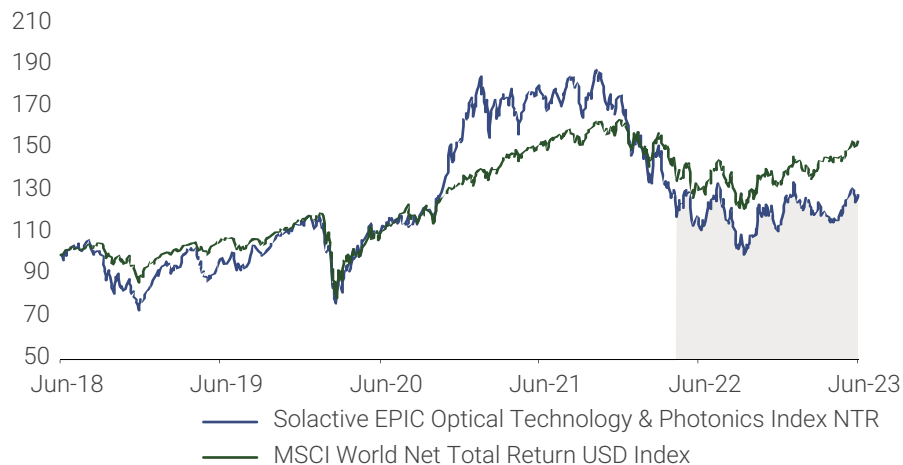
# Optical Technology & Photonics

Performance

## Historical and simulated performance (1y)



## Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

## Index performance\*

| Index performance* | Qtd    | 1 year  | 3 years | 5 years |
|--------------------|--------|---------|---------|---------|
| Cumulative Return  | 2.96%  | 12.51%  | 16.39%  | 28.89%  |
| Annualized Return  |        |         | 5.19%   | 5.20%   |
| Volatility         | 15.78% | 23.99%  | 22.88%  | 23.55%  |
| Sharpe Ratio       | 78.72% | 52.16%  | 22.70%  | 22.10%  |
| Max Drawdown       | -7.87% | -25.48% | -46.90% | -46.90% |

## Index total return contribution (Qtd)

| Top 5            |         | Bottom 5         |          |
|------------------|---------|------------------|----------|
| Nlight Inc       | ▲ 1.27% | Faro Tech        | ▼ -0.96% |
| Nikon Corp       | ▲ 0.84% | Desktop Metal-A  | ▼ -0.78% |
| Lightwave Logic  | ▲ 0.78% | Carl Zeiss Me-Br | ▼ -0.63% |
| Luna Innovations | ▲ 0.66% | Sunny Optical    | ▼ -0.45% |
| Mks Instruments  | ▲ 0.56% | Lasertec Corp    | ▼ -0.44% |

## Portfolio composition

| Latest additions     | Latest deletions     |
|----------------------|----------------------|
| no rebalancing in Q2 | no rebalancing in Q2 |

## Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | LAZR LN | ISIN                 | IE000QNJAOX1 |
| TER                | 0.49%   | Inception date       | 07/09/2022   |
| Currency           | USD     | Index inception date | 06-May-22    |
| Securities lending | No      | Replication method   | Physical     |

## Key risk

The value of an investment and any income taken from it is not guaranteed and can go down as well as up; You may not get back the amount you originally invested. Simulated and past performance is not a guide to the future. The above information does not constitute a recommendation to buy or sell any security.

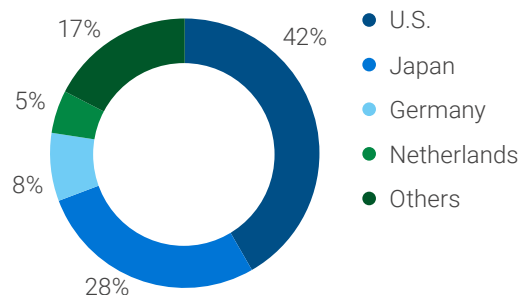


# Optical Technology & Photonics

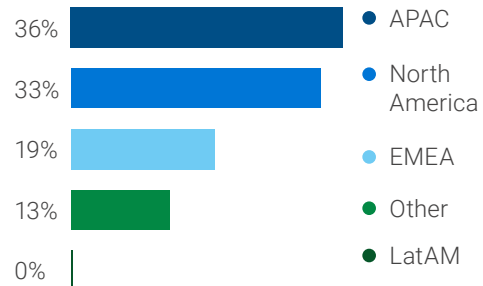
Characteristics

## Geographical breakdown

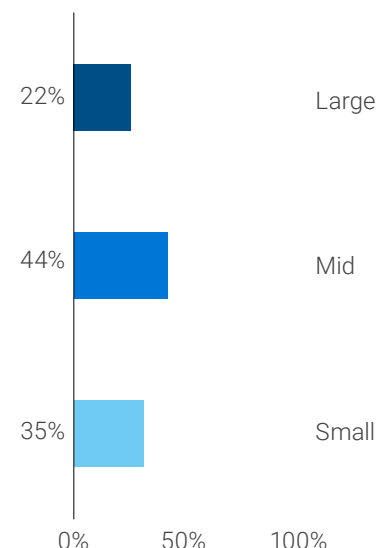
By domicile



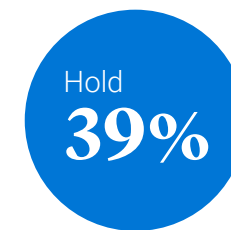
By revenue source



## Market cap breakdown



## Third party analyst stock consensus ratings\*\*



## Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 1.20    | 0.93    |
| Price/Sales    | 2.68    | 3.43    |
| BPS            | 14.04   | 12.48   |
| P/E Positive   | 28.02   | 21.29   |
| ROE            | 11.35   | 11.01   |
| Price/Book     | 3.00    | 2.83    |
| P/E (1y fwd)   | 49.65   | 28.69   |
| P/E (3y fwd)   | 27.96   | 26.39   |
| Sales (1y fwd) | 2,617   | 2,707   |
| Sales (3y fwd) | 3,148   | 3,018   |

## Constituents overlap

|                   |      |
|-------------------|------|
| S&P 500           | 0.1% |
| MSCI World        | 0.9% |
| Nasdaq 100        | 0.0% |
| Total stocks = 36 |      |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

Consensus ratings do not constitute a recommendation to buy or sell any security. The consensus ratings presented in this chart are not in relation to the L&G Thematic ETFs.

## Key risk

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# Pharma Breakthrough

## Company spotlight

### CTI BioPharma

Founded in 1991 in Seattle, CTI BioPharma (CTI) is a commercial biopharmaceutical company focused entirely on the development and commercialisation of novel targeted therapies for orphan drugs that aim to benefit patients and healthcare providers.

CTI has one FDA-approved product, VONJO, which is an anti-cancer medication used to treat myelofibrosis in adults, along with multiple other drugs in development in its pipeline. Currently, there are two drugs that have completed Phase 3 trials and two drugs that completed Phase 2, along with one drug ongoing with Phase 3 and one drug ongoing with Phase 1/2.

CTI's growth strategy is based on three key elements: the successful commercialisation of VONJO in the US through coordinated efforts of the company's sales, marketing and market access teams, the evaluation of strategic product collaborations to accelerate development and commercialization, and the identification and acquisition of additional pipeline opportunities. Historically, the company has built its candidate pipeline through licensing and acquiring undervalued assets and it aims to continue to seek out additional product candidates.

Source: LGIM, Bloomberg, Evaluate Pharma, as at 30 June 2023.

In May 2023, Swedish Orphan Biovitrum (Sobi), a global healthcare leader in hematology, immunology and speciality care, announced the acquisition of CTI at ~89% premium, for \$9.10 per share of common stock in an all-cash transaction, representing an implied equity value of approximately \$1.7 billion. The transaction aims to diversify Sobi's portfolio of leading hematology medicines through CTI's leading product, VONJO, grow and explore new indications and development opportunities for VONJO, and enhance Sobi's commercial footprint in the US.

## Last quarter performance commentary

The Solactive Pharma Breakthrough Value Index returned -3.4% over the quarter.

Some positive approval news concerned Ipsen's rare bone disease drug, which won a positive recommendation from an FDA advisory panel and signalled support for an approval. Argenx's injection for generalised myasthenia won an FDA approval while marketing authorisations are under review by the European and Japanese medicine authorities. The FDA approved Sarepta's gene therapy for Duchenne muscular dystrophy in paediatric patients aged four to five. AstraZeneca's potential treatment of advanced liver cancer showed promising results, and the

Genmab / AbbVie blood cancer treatment for relapsed/refractory follicular lymphoma went through phase 1/2 clinical trials, delivering a higher response rate than the efficacy threshold.

On the M&A front, Amgen's \$28bn acquisition of Horizon has been challenged by the US Federal Trade Commission and CTI BioPharma was acquired by Swedish Orphan Biovitrum (Sobi) at an 89% premium for a \$1.2bn value.

The main contributors to performance were CTI BioPharma (returned +116.4%); Eisai (+19.0%), on a good trajectory to get its Alzheimer's treatment for approval around the world after strong data on its clinical effectiveness; and Chugai Pharmaceutical (+19.1%), on the back of a strong pipeline. The main detractors were Travere Therapeutics (-28.2%), Emergent BioSolutions (-10.0%) and PTC Therapeutics (-14.4%). Travere Therapeutics did not achieve its efficacy target for its Phase 3 study on focal segmental glomerulosclerosis, a rare kidney disease; Emergent BioSolutions suffered from profitability pressures within its Contract Development & Manufacturing (CDMO) business; and PTC Therapeutics, after failing to reach its goal in an experimental treatment of a rare neuromuscular disorder, announced the discontinuation of its early-stage research programmes in gene therapy.

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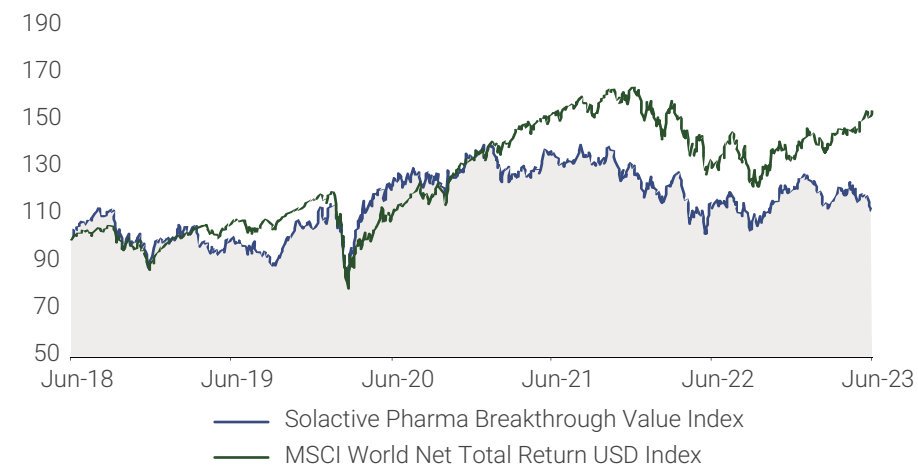
# Pharma Breakthrough

Performance

## Historical and simulated performance (1y)



## Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

## Index performance\*

| Index performance* | QtD     | 1 year  | 3 years | 5 years |
|--------------------|---------|---------|---------|---------|
| Cumulative Return  | -3.43%  | -0.94%  | -8.23%  | 11.87%  |
| Annualized Return  |         |         | -2.83%  | 2.27%   |
| Volatility         | 16.44%  | 16.57%  | 17.15%  | 19.64%  |
| Sharpe Ratio       | -79.54% | -5.69%  | -16.48% | 11.55%  |
| Max Drawdown       | -9.96%  | -14.08% | -27.20% | -27.35% |

## Index total return contribution (QtD)

| Top 5            |         | Bottom 5          |          |
|------------------|---------|-------------------|----------|
| Cti Biopharma Co | ▲ 2.72% | Traverse Therapeu | ▼ -0.98% |
| Eisai Co Ltd     | ▲ 0.61% | Emergent Biosolu  | ▼ -0.84% |
| Chugai Pharma Co | ▲ 0.48% | Ptc Therapeutics  | ▼ -0.53% |
| Vertex Pharm     | ▲ 0.40% | Jcr Pharmaceutic  | ▼ -0.52% |
| Ultragenyx Pharm | ▲ 0.36% | Swedish Orphan B  | ▼ -0.51% |

## Portfolio composition

| Latest additions     | Latest deletions     |
|----------------------|----------------------|
| no rebalancing in Q2 | no rebalancing in Q2 |
|                      | CTI BioPharma (M&A)  |

## Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | BIOT LN | ISIN                 | IE00BF0H7608 |
| TER                | 0.49%   | Inception date       | 23/01/2018   |
| Currency           | USD     | Index inception date | 03-Jan-18    |
| Securities lending | No      | Replication method   | Physical     |

## Key risk

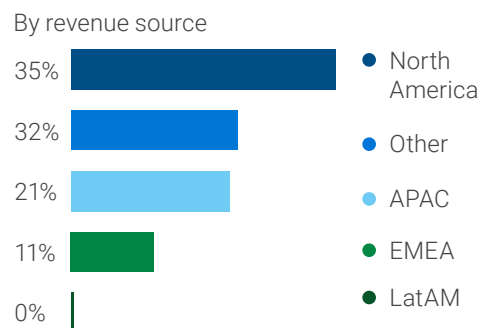
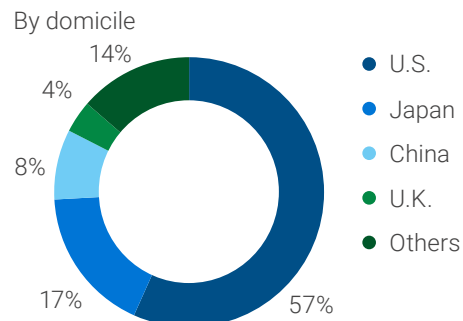
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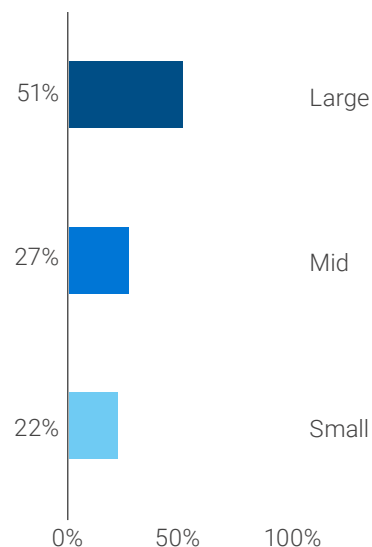
# Pharma Breakthrough

## Characteristics

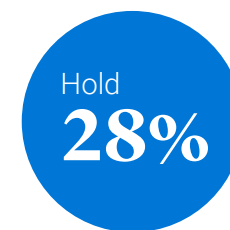
### Geographical breakdown



### Market cap breakdown



### Third party analyst stock consensus ratings\*\*



### Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 0.58    | 0.99    |
| Price/Sales    | 4.88    | 5.59    |
| BPS            | 10.82   | 12.44   |
| P/E Positive   | 24.54   | 22.11   |
| ROE            | 7.50    | 8.38    |
| Price/Book     | 3.10    | 3.56    |
| P/E (1y fwd)   | 27.82   | 31.27   |
| P/E (3y fwd)   | 20.27   | 21.68   |
| Sales (1y fwd) | 4,274   | 3,220   |
| Sales (3y fwd) | 4,959   | 4,579   |

### Constituents overlap

|                   |      |
|-------------------|------|
| S&P 500           | 0.7% |
| MSCI World        | 0.8% |
| Nasdaq 100        | 1.2% |
| Total stocks = 32 |      |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

Consensus ratings do not constitute a recommendation to buy or sell any security. The consensus ratings presented in this chart are not in relation to the L&G Thematic ETFs.

### Key risk

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# Robotics & Automation

## Company spotlight

### Symbotic

Symbotic has quickly emerged as a logistics and warehouse automation leader with a comprehensive, AI-powered solution to automate the processing of pallets and cases for retailers. The American company developed an innovative robotic and software system that can be retrofitted into existing warehouses. It uses a high-density, multi-layer buffering architecture and hundreds of robots to fulfil four key missions across the logistics journey: break inbound freight down from pallet to case (singulation), identify, label and create a virtual representation (digital twin) of each case, optimise storage and routing with autonomous mobile robots that can move up to 25 mph and are powered by rapid-charging ultracapacitors, and retrieve and palletize packages for outbound processing.

In just a few years, Symbotic has amassed a large order backlog worth over \$12 billion for more than 170 systems. Walmart began testing the solution in 2017, and has now committed to deploying it in every one of its 42 regional distribution centres across the US, becoming a primary partner. While the expansion of this partnership is expected to account for a significant part of Symbotic's business in the next five years, the

company is also working with an expanding range of clients. Symbotic reported Q1 results largely ahead of expectations, with revenue up 177% year-on-year. We expect that this growth will continue with revenue of over \$1 billion in the fiscal year ending September 2023 and over \$2 billion in fiscal year 2025, for an annual growth rate of over 50%. While this is certainly an aggressive growth trajectory, management is also committed to driving profitability, the company could turn profitable by the end of 2024.

## Last quarter performance commentary

The ROBO Global Robotics and Automation UCITS Index returned +7.1% over the quarter.

The Q2 gains were led by Logistics & Warehouse Automation (+15%), with strong returns from recent portfolio addition Symbotic, as well as Manhattan Associates, GXO Logistics, Toyota Industries and Cargotec. The sector continued its powerful recovery, after cratering in 2022 when bellwether Amazon pulled back on spending.

Computing & AI (+12.3%) saw standout advances at Nvidia and Global Unichip, with both stocks up over 40% in Q2. Adoption of generative AI tools has reached

a meaningful pace, driving demand for computing power to unexpected levels, as reflected in Nvidia's stunning announcement that its revenue in the July-ending quarter appeared set to reach \$11bn, more than 50% above analysts' estimates at the time.

Industrial automation powerhouses Rockwell, ABB and Mitsubishi Electric also increased by double-digit percentages, as fears of an imminent recession receded. In fact, Rockwell's results point to an increasingly obvious boom in US factory automation, with 27% sales growth – a number typically seen coming out of a recession. Meanwhile, Healthcare (+4.5%) and Food & Agriculture (+1.3%) lagged, with declines at Illumina, iRhythm, Tecan, and GEA.

ROBO ended the quarter trading on 27x forward earnings, compared with 24x at the beginning of the year. While multiple expansion has been remarkable in Computing and AI (now 30x) and Logistics Automation (now 31x), it has remained subdued in Manufacturing & Industrial Automation (18x), which continues to present significant growth opportunities in the context of rising costs and labour shortages.

Source: LGIM, Bloomberg, ROBO Global®, as at 30 June 2023.

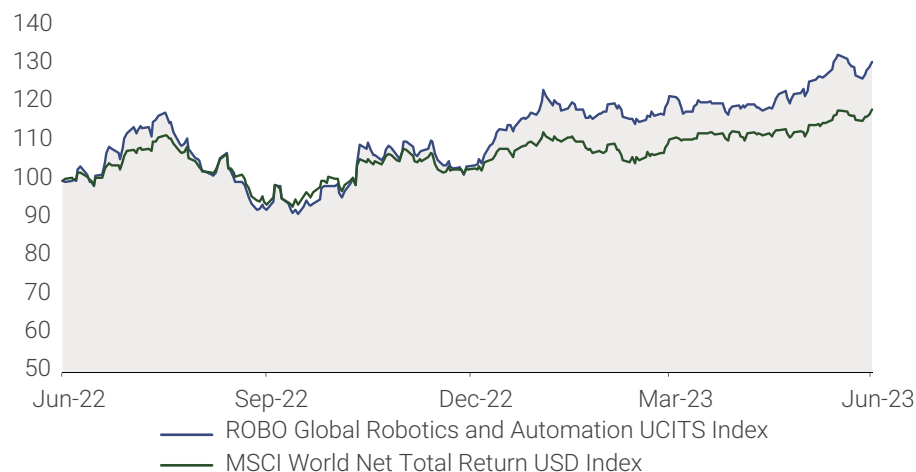
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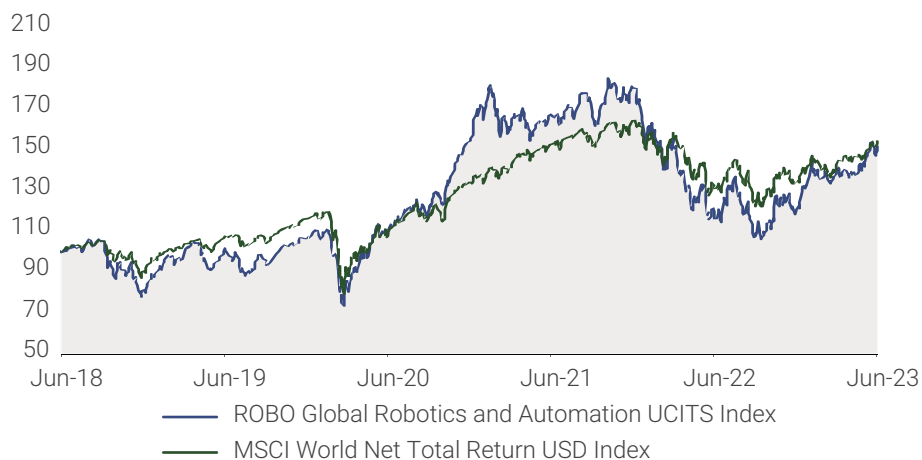
# Robotics & Automation

## Performance

### Historical and simulated performance (1y)



### Historical and simulated performance (5y)



\*Source: Bloomberg as at 30 June 2023, all values are based in USD. The backtested index data has been sourced from the index provider and is based on what they perceive to be reasonable assumptions and objective data; The index data is gross of fees/costs but is net of withholding taxes. The effect of fees and charges would reduce the returns shown. Shaded area indicates live period of the index.

### Index performance\*

| Index performance* | Qtd     | 1 year  | 3 years | 5 years |
|--------------------|---------|---------|---------|---------|
| Cumulative Return  | 7.13%   | 30.91%  | 37.70%  | 51.89%  |
| Annualized Return  |         |         | 11.26%  | 8.72%   |
| Volatility         | 13.28%  | 21.63%  | 20.23%  | 21.45%  |
| Sharpe Ratio       | 239.58% | 143.04% | 55.67%  | 40.63%  |
| Max Drawdown       | -4.57%  | -22.43% | -42.65% | -42.65% |

### Index total return contribution (Qtd)

| Top 5            |         | Bottom 5         |          |
|------------------|---------|------------------|----------|
| Symbotic Inc     | ▲ 0.95% | Illumina Inc     | ▼ -0.34% |
| Nvidia Corp      | ▲ 0.82% | Faro Tech        | ▼ -0.31% |
| Intuitive Surgic | ▲ 0.64% | Airtac Internati | ▼ -0.27% |
| Samsara Inc-CI A | ▲ 0.49% | Irhythm Technolo | ▼ -0.24% |
| Global Unichip   | ▲ 0.43% | Tecan Group Ag-R | ▼ -0.18% |

### Portfolio composition

| Latest additions   | Latest deletions |
|--------------------|------------------|
| no additions in Q2 | Materialise NV   |

### Fund information

|                    |         |                      |              |
|--------------------|---------|----------------------|--------------|
| Ticker             | ROBO LN | ISIN                 | IE00BMW3QX54 |
| TER                | 0.8%    | Inception date       | 27/10/2014   |
| Currency           | USD     | Index inception date | 17-Jun-14    |
| Securities lending | No      | Replication method   | Physical     |

### Key risk

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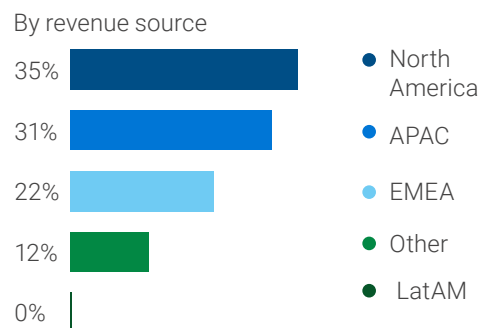
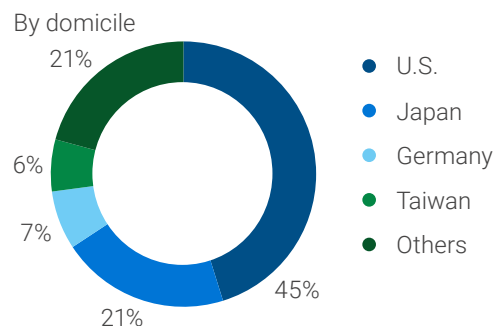




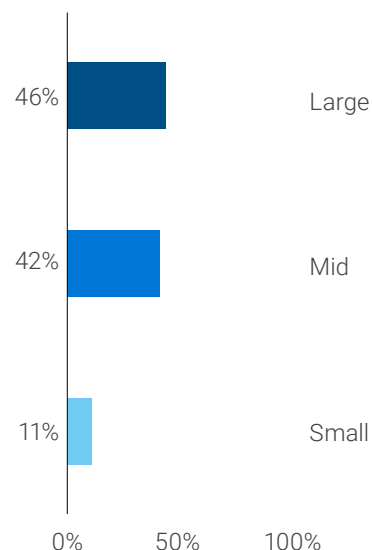
# Robotics & Automation

## Characteristics

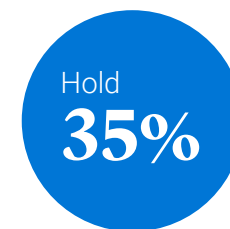
### Geographical breakdown



### Market cap breakdown



### Third party analyst stock consensus ratings\*\*



### Key ratios

|                | Current | Q2 2022 |
|----------------|---------|---------|
| EPS            | 1.48    | 1.59    |
| Price/Sales    | 3.59    | 3.12    |
| BPS            | 15.68   | 15.24   |
| P/E Positive   | 28.31   | 25.92   |
| ROE            | 11.26   | 10.33   |
| Price/Book     | 3.43    | 3.31    |
|                |         |         |
| P/E (1y fwd)   | 42.87   | 29.30   |
| P/E (3y fwd)   | 29.10   | 25.88   |
| Sales (1y fwd) | 5,728   | 6,202   |
| Sales (3y fwd) | 6,801   | 6,346   |

### Constituents overlap

|                   |      |
|-------------------|------|
| S&P 500           | 3.6% |
| MSCI World        | 3.9% |
| Nasdaq 100        | 4.4% |
| Total stocks = 78 |      |

Source: Bloomberg, LGIM; All values are based in USD; As close of 30 June 2023. Please refer to end of this report for all definitions. \*\*Consensus ratings are based on the average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months.

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### Key risk

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# Glossary

## Calculation methodology for performance statistics:

**Cumulative Return:** Total return of the index net of withholding taxes over the given period.

**Annualized Return:** Annualized total return of the index net of withholding taxes over the given period.

**Volatility:** Annualized standard deviation of daily returns over the given period.

**Max Drawdown:** Maximum % loss from the peak to the trough in the given period.

**Large Cap:** Companies whose market cap is larger than \$5bn.

**Mid Cap:** Companies whose market cap is comprised between \$2bn and \$5bn.

**Sharpe ratio:** Annualised excess return divided by annualised volatility.

**Small Cap:** Companies whose market cap is lower than \$2bn.

**Third party analyst stock consensus ratings:** Average of recommendations for each underlying stock made by analysts on Bloomberg within the last 12 months. Consensus ratings do not constitute a recommendation to buy or sell any security. The consensus ratings presented in this chart are not in relation to the L&G Thematic ETFs.

## Calculation methodology for key ratios statistics:

**EPS:** Median of last 12 months earnings per share for each index component.

**Price/Sales:** Median of stock prices divided by sales per share of all index components.

**BPS:** Median of total equity divided by the number of shares of all index components.

**P/E positive:** Median of stock price divided by positive earnings per share for each index components.

**ROE:** Median of net income divided by the average total common equity for each index component.

**Price/Book:** Median of stock prices divided by the total equity per share for each index component.

**P/E (1y fwd):** Median of stock price divided by index estimated earnings next year for each index component.

**P/E(3y fwd):** Median of stock price divided by index estimated earning in three years for each index component.

**Sales (1y fwd):** Average of estimated sales next year for each index component.

**Sales (3y fwd):** Average of estimated sales in three years for each index component.

## Contact us:

For any questions on this report, please contact your usual LGIM representative or email [fundsales@lgim.com](mailto:fundsales@lgim.com). All calls are recorded. Call charges will vary.



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Ali Sabri

# Contact us

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