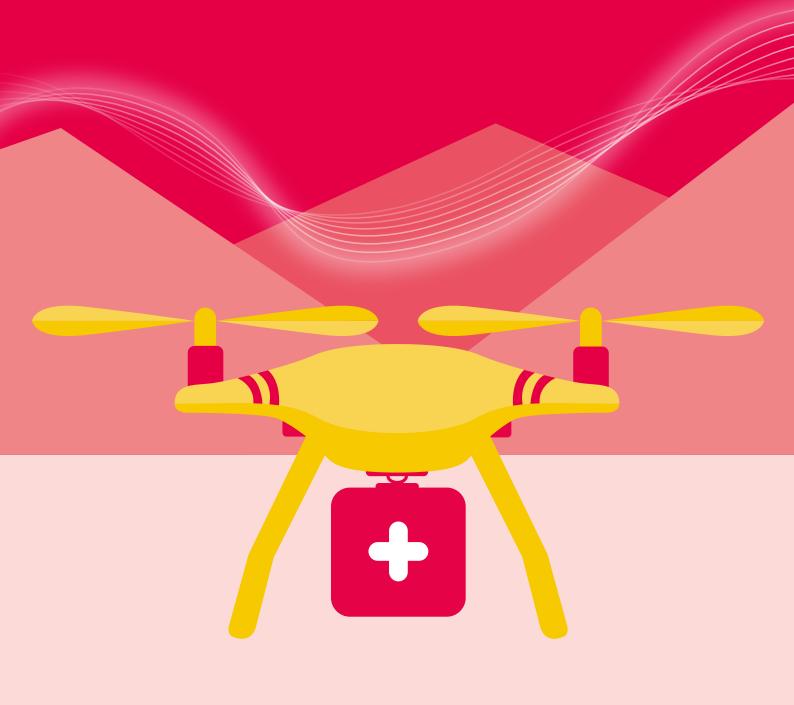
## Disruptive Technology

Unicorns are real

- What makes these innovations so important?
- How today's game-changers are reinventing business models
- Why Al-driven investing in disruptive tech could help future proof your portfolio





# Preparing for change



**Smart Cities** 



**Digital Economy** 

Our world is changing. Technological breakthroughs, evolutionary economic forces and the climate emergency are reshaping reality for billions of people. The question is: will your portfolio keep up?

At Lyxor, we have identified a series of investment themes we believe will be at the forefront of this new revolution. To access these most powerful of megatrends, we've partnered with data powerhouse MSCI and a board of leading industry experts to build an innovative range of thematic ETFs:



**Future Mobility** 



**Disruptive Technology** 



Millennials

Each of these ETFs combines human insight, cutting edge data science and Artificial Intelligence techniques in a unique way to identify the companies that matter most, and ensure your portfolio stays one step ahead. We use low cost indexing to help maximise your return. And we screen our holdings based on their ESG impact on the world around them.

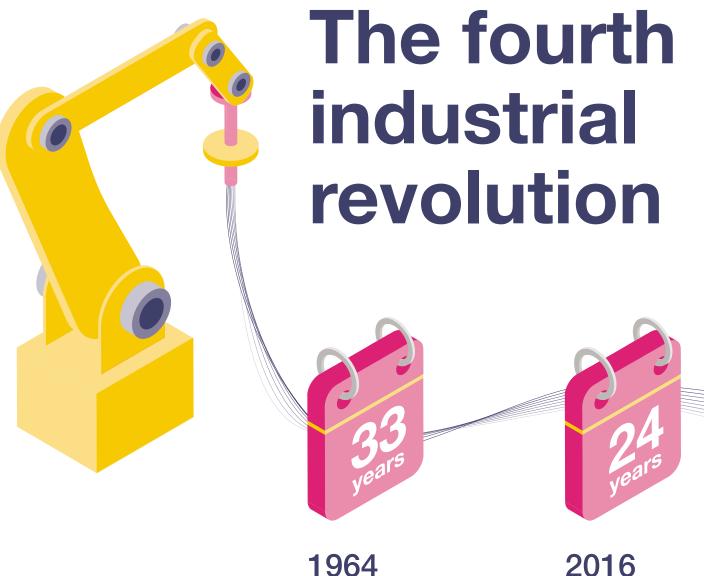
As a pioneering ETF provider with a history of innovation, we've gone the extra mile to build some truly state-of-theart funds for a new state of mind. We're incredibly excited about this range and hope you can join us in preparing portfolios for change.





Artificial Intelligence, 3D printing and the Internet of Things are just some examples of technologies primed to accelerate disruption across all sectors, and fundamentally improve the quality of our lives.

Chanchal Samadder Head of Equities, Lyxor ETF



1964

In 1964 the average lifespan of an S&P 500 company was 33 years1

By 2016 it was 24 years1



This is the power of disruptive technology.

2027

By 2027, it could be just 12 years<sup>1</sup>

New technologies will deliver simpler, more accessible, and often more cost-effective solutions to many of the biggest challenges faced by humankind, upending the status quo and challenging all incumbents. This wave of technological invention and disruption is sometimes called "the fourth industrial revolution" – a revolution that will transform how we live and work as much as steam power, electricity and computer technology each did.

Companies embracing disruptive tech have the power to reinvent themselves and create new markets. Some of them even turn into 'unicorns', privately-held companies valued at over \$1 billion. Disruption isn't just about technological advances – it's about doing things differently, and doing things better.

# Data, devices & people •

The rapidly developing Internet of Things (IoT) is one example of how advanced technology will quickly embed itself in our lives, automating away ongoing tasks and freeing us to concentrate on other tasks.

The IoT involves networking devices so that they automatically communicate with each other and only involve humans where necessary. These can be household objects, such as smart meters that transmit your electricity and gas readings to your energy supplier to prepare your bill. They can be integrated into our urban infrastructure, tracking the movement of public transport and sending updates to smartphone apps. Or they can be industrial, automatically monitoring the levels of parts in inventory and ordering more when needed.

The IoT will be a \$1.1trn market by 2021, according to projections from research firm IDC<sup>2</sup>. However, even this huge number doesn't convey the pace at which IoT will be embedded in our everyday lives. By 2025, the average connected person will interact with an IoT-enabled device around 4,900 times per day.<sup>3</sup>

Number of interactions with an IoT-enabled device per person per day<sup>3</sup>

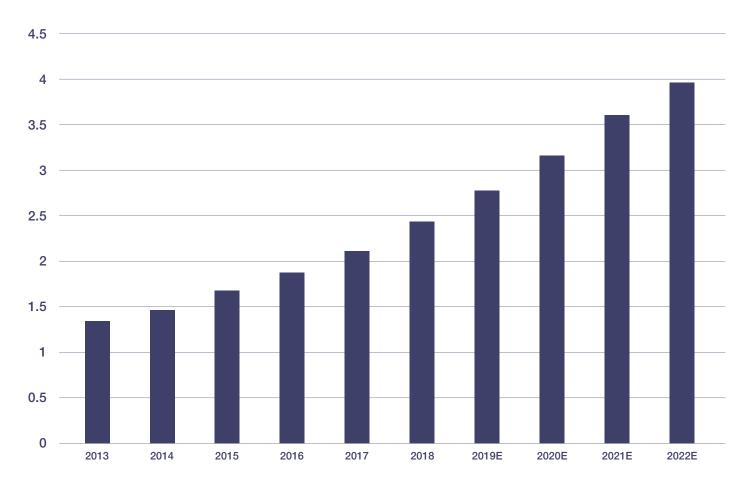


<sup>2</sup>IDC, December 2017, Worldwide Semiannual Internet of Things Spending Guide. <sup>3</sup>Data Age 2025, November 2018, IDC data

### The rapid rise of the robots

Robotics is another fast-growing area of disruption. Spending on robotics and the related field of drones is expected to reach almost \$220bn per year by 2021.<sup>4</sup> Robots have played a part in industry and manufacturing for many years, taking on repetitive or dangerous tasks. Yet they are becoming increasingly capable and flexible, which will open up whole new markets for robots to replace or work alongside humans.

### Total industrial robots worldwide (millions)\*



For example, surgical robots are already disrupting the practice of surgery. Already, they can carry out many tasks more precisely than a human surgeon, with the added advantage that the supervising surgeon can work remotely, meaning that top-level expertise for complex procedures can be available without doctors or patients having to travel.

Other exciting areas include 3D printing, also known as Additive Manufacturing (AM) – creating objects by building them up from raw materials such as plastic and metal, one layer at a time. This can reduce costs, speed up production and make supply chains more efficient.

A wide range of industries are beginning to adopt the technology: 3D Systems Corp for instance produces varied solutions, including parts for rocket engines, dentures for orthodontic device producers, soles for shoe makers, and even parts for vintage cars. Total revenues for AM products and services are likely to reach \$15.8bn in 2020, according to Wohlers Associates, rising to \$35.6bn by 2024.<sup>5</sup>

\*International Federation of Robotics, World Robotics 2019, https://ifr.org/downloads/press2018/IFR%20World%20Robotics%20 Presentation%20-%2018%20Sept%202019.pdf Date range from 2013 to 2022, with 2019-2022 figures being forecast. 4IDC, January 2018, Worldwide Semiannial Robotics and Drone Spending Guide. 5Wohlers Associates, March 2019, Wohlers Report 2019

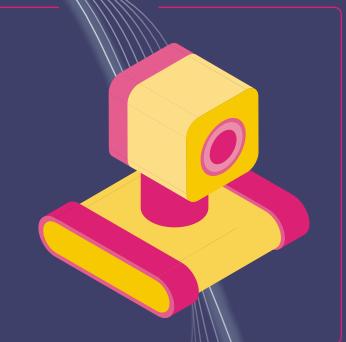
## Machine and man working together

The firms that will deliver these kinds of advances are well represented in our Disruptive Technology fund by stocks such as Proto Labs, which uses advanced technology including 3D printing to manufacture prototype and on-demand parts for customers around the world. Japan's Fanuc is the world leader in industrial robots, while US-based Cognex Corporation specialises in machine-vision systems (the sensors and software that guide assembly line robots).

However, disruptive technologies aren't just concerned with building better machines. Finding ways for humans to work together with technology will be at the centre of this revolution. Hence advances in robotics also include "service robots", which could replace customer-service staff in hospitality and retail. This should cut costs, improve efficiency – and even deal with the likely shortage of service staff caused by ageing populations in many wealthy nations.

### The AI revolution

Harnessing the full potential of the fourth industrial revolution will depend on the fast-growing fields of artificial intelligence (AI), cognitive computing and machine learning, where spending is expected to exceed \$79bn by 20226. These fields involve developing computer systems that are capable of doing the same kind of "thinking" tasks that can currently only be performed by humans – often highly skilled and trained humans – as well as giving them the ability to recognise speech and images in a way that allows us to interact naturally with them.



<sup>6</sup>IDC, March 2019, Worldwide Semiannual Cognitive Artificial Intelligence Systems Spending Guide

### Error rate for Google's speech-recognition technology\*

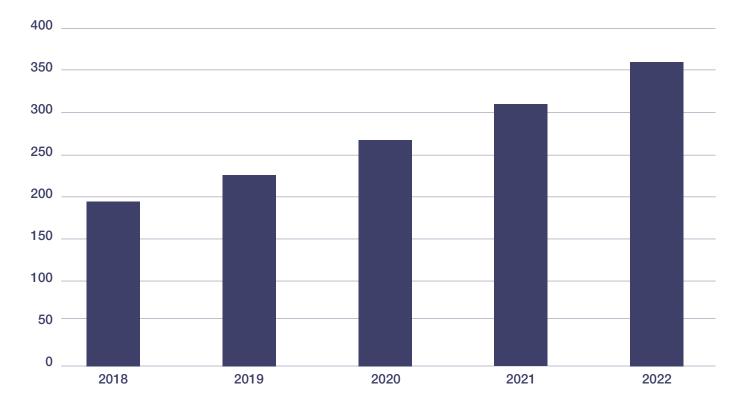


\*https://venturebeat.com/2017/05/17/googles-speech-recognition-technology-now-has-a-4-9-word-error-rate/

The potential applications of Al are vast. In the future, if you are concerned about your health, your first stop may not be your doctor – it's more likely to be an Al healthcare assistant that can assess your symptoms and your vital signs (taking into account data passed to it via IoT-connected devices such as fitness trackers, for example).

Cutting-edge AI is still at a relatively early stage of development, so many of the firms in this field are private. However, investors can still gain exposure to the sector through companies like Nvidia, which designs the chips used in high-performance data centres that power many AI applications. Meanwhile technology giant Microsoft has focused on cloud computing in recent years, meaning it will be exposed to the growth of AI and anything else that requires the processing of vast amounts of data, such as the Internet of Things.

### Global public cloud computing revenue (\$bn)\*\*



<sup>\*\*</sup>Gartner, November 2019, Public Cloud Services, Worldwide, 2017-2023, Q19 Update

Better living through technology

Making sure that we live longer, healthier lives is the goal of many of the firms in our Disruptive Technology ETF, reflecting ongoing breakthroughs in medical and biotech research. That's why over 40% of the fund's holdings are from the healthcare sector.

Holdings include giants such as Roche, one of the world's largest pharmaceuticals firms. It's included because it is a leader in cutting-edge technologies such as cancer immunotherapy – cancer treatments that mobilise the body's immune system to attack cancer cells. But the portfolio also includes much smaller biotech firms such as Regenxbio, a global leader in developing adeno-associated virus (AAV) gene therapies. These viral delivery vehicles that are not known to cause diseases have the potential to transform the ways some diseases are treated and even to cure congenital conditions (those that people are born with), by editing the patient's own DNA within their cells.

And no investor can afford to overlook the potential of purely digital businesses, such as financial technology and e-commerce, which pose an existential threat to many traditional firms such as banks and high-street retailers. That's why the index also includes technologies such as the fast-growing digital payments market, via payment-processing businesses such as Square and Adyen, as well as established firms such as Mastercard and Visa, which are embracing the possibilities of the digital economy.

Cost of sequencing a full human genome\*

\_\_\_\_ 2001

\$95,263,072

2019

\$942

<sup>\*</sup>National Human Genome Research institute, https://www.genome.gov/about-genomics/fact-sheets/DNA-Sequencing-Costs-Data

### The disruptive investment approach

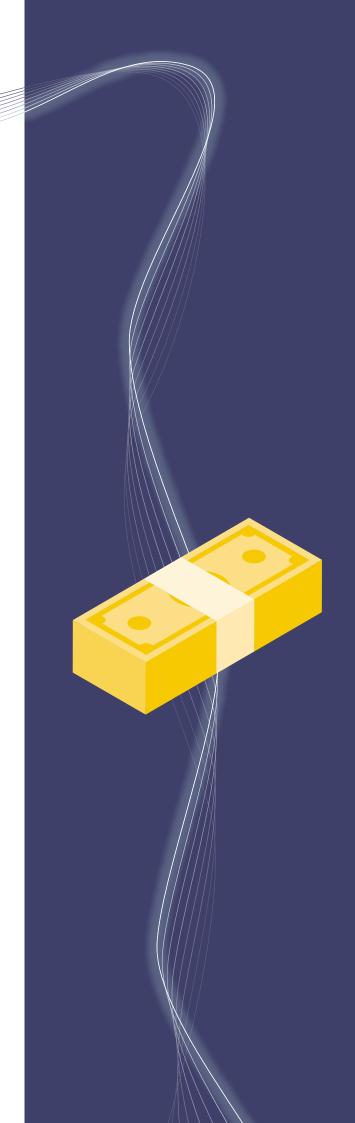
To identify companies in prime position to accelerate disruption, we've employed disruptive approaches of our own. With the help of data powerhouse MSCI, our unique fund blends the insight of industry experts with AI and big data to help us identify the companies that can change the world, and make obsolescence a thing of the past.

Specifically, we use Natural Language Processing techniques to help uncover companies closely geared to disruptive tech. This process means we capture both established companies and those at an earlier stage of their development. In fact, 60% of the portfolio is in small-caps, giving you more accessto companies with high growth potential compared to a traditional capitalisation-weighted technology tracker. We also include an ESG filter to build a more responsible exposure.

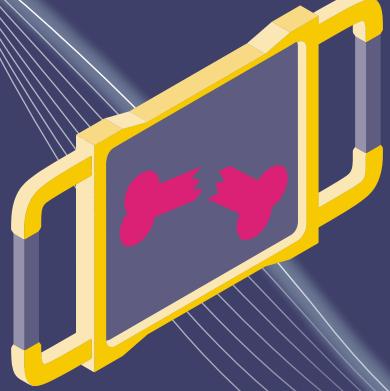
At Lyxor, we've been upending the investment industry with innovative products for more than 20 years. As an ETF provider, disruptive technology is particularly close to our heart. ETFs tick all the boxes for disruption – by democratising investing, lowering costs and reducing friction in the overall investment process, ETF providers created a trillion-dollar market and put pressure on traditional asset managers, forcing many to rethink their business models.

Our range of thematic ETFs offers the most advanced solution yet to today's biggest investing challenge – making sure that your portfolio is fit for a future where the pace of change is accelerating and the cost of missing out could be enormous.

<sup>7</sup>Lyxor International Asset Management, as at 28/02/2020.



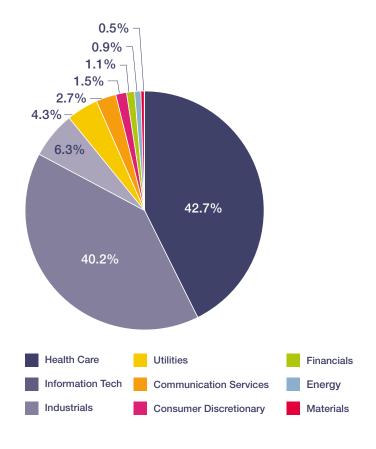
### An X-ray of our ETF



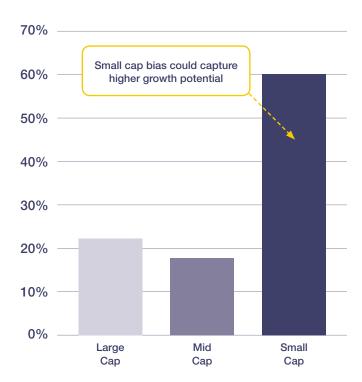
### Related concepts, products and services

- 3D Printing
- Robotics
- Fintech
- Cloud Computing
- Digital Payments
- Healthcare Innovation
- The Internet of Things (IoT)
- Clean Energy & Smart Grids
- Cybersecurity

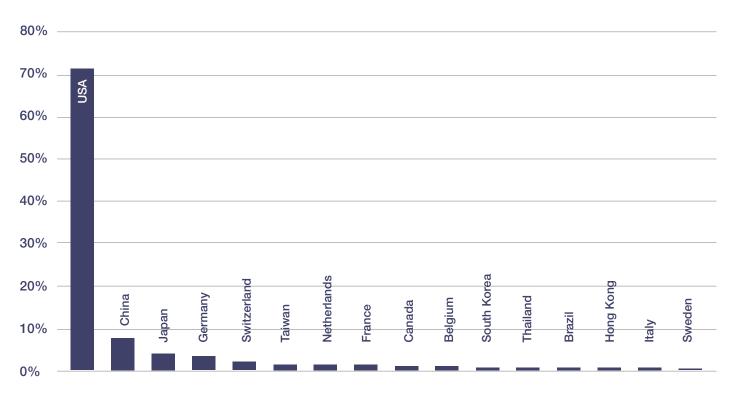
### Sector breakdown



### Market cap breakdown



### Country breakdown



Source for all data: Lyxor International Asset Management, MSCI, as at 28/02/2020.

### Top 10 holdings

Security name	GICS Sector	Country	Weight
ANAPTYSBIO	Health Care	USA	2.06%
FATE THERAPEUTICS	Health Care	USA	2.03%
REVANCE THERAPEUTICS	Health Care	USA	1.68%
ENPHASE ENERGY	Information Technology	USA	1.39%
ARENA PHARMACEUTICALS	Health Care	USA	1.29%
BANDWIDTH A	Communication Services	USA	1.26%
PRINCIPIA BIOPHARMA	Health Care	USA	1.13%
ADYEN NV	Information Technology	Netherlands	1.09%
SOLAREDGE TECHNOLOGIES	Information Technology	USA	1.08%
HOMOLOGY MEDICINES	Health Care	USA	1.07%
Total			14.08%

ETF name	Replication type	Bloomberg tickers	ISIN	Current temporary TER <sup>*</sup>	Target TER*
Lyxor MSCI Disruptive Technology ESG Filtered (DR) UCITS ETF	Physical	UNIC, DTEC	LU2023678282	0.15% <sup>-</sup>	0.45% <sup>-</sup>

Source for top 10 holdings data: Lyxor International Asset Management, MSCI, as at 28/02/2020.

Discover the rest of our range covering Future Mobility, Smart Cities, Millennials, and Digital Economy at lyxoretf.com

### A note on investing in megatrends

### Time horizons are long, and portfolios may be concentrated



Megatrends take time to shape the world; your investment horizon should be long term



- Thematic indices are more narrow than traditional cap weighted indices
- As a result of this increased concentration, volatility may be higher



Unconstrained by traditional allocations based on countries and sectors, thematic ETFs could be used as 'satellites' to strengthen the core of your equity portfolio

This document is for informative purposes only, and should not be taken as investment advice. Lyxor ETF does not in any way endorse or promote the companies mentioned in this document.

<sup>\*</sup>Source: Lyxor International Asset Management, as at 10/03/2020. Target TER is 0.45% but has temporarily been decreased to 0.15% until September 2021.

### Knowing your risk

It is important for potential investors to evaluate the risks described below and in the fund prospectus on our website www.lyxoretf.com

### Capital at risk

ETFs are tracking instruments: Their risk profile is similar to a direct investment in the Underlying index. Investors' capital is fully at risk and investors may not get back the amount originally invested.

### Replication risk

The fund objectives might not be reached due to unexpected events on the underlying markets which will impact the index calculation and the efficient fund replication.

### Counterparty risk

With synthetic ETFs, investors are exposed to risks resulting from the use of an OTC swap with Société Générale. In-line with UCITS guidelines, the exposure to Société Générale cannot exceed 10% of the total fund assets. Physically replicated ETFs may have counterparty risk if they use a securities lending programme.

### **Underlying risk**

The Underlying index of a Lyxor ETF may be complex and volatile. For example, when investing in commodities, the Underlying index is calculated with reference to commodity futures contracts exposing the investor to a liquidity risk linked to costs such as cost of carry and transportation. ETFs exposed to Emerging Markets carry a greater risk of potential loss than investment in Developed Markets as they are exposed to a wide range of unpredictable Emerging Market risks.

### Concentration risk

Thematic ETFs select stocks or bonds for their portfolio from the original benchmark index. Where selection rules are extensive it can lead to a more concentrated portfolio where risk is spread over fewer stocks than the original benchmark.

### Currency risk

ETFs may be exposed to currency risk if the ETF is denominated in a currency different to that of the Underlying index they are tracking. This means that exchange rate fluctuations could have a negative or positive effect on returns.

### Liquidity risk

Liquidity is provided by registered market-makers on the respective stock exchange where the ETF is listed, including Société Générale. On exchange, liquidity may be limited as a result of a suspension in the underlying market represented by the Underlying index tracked by the ETF; a failure in the systems of one of the relevant stock exchanges, or other market-maker systems; or an abnormal trading situation or event.

### Important Information



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In addition, the indicative net asset value is published on the Reuters and Bloomberg pages of the product, and might also be mentioned on the websites of the stock exchanges where the product is listed. Prior to investing in the product, investors should seek independent financial, tax, accounting and legal advice. It is each investor's responsibility to ascertain that it is authorised to subscribe, or invest into this product. This document together with the prospectus and/ or more generally any information or documents with respect to or in connection with the Fund does not constitute an offer for sale or solicitation of an offer for sale in any jurisdiction (i) in which such offer or solicitation is not authorized, (ii) in which the person making such offer or solicitation is not qualified to do so, or (iii) to any person to whom it is unlawful to make such offer or solicitation. In addition, the shares are not registered under the U.S Securities Act of 1933 and may not be directly or indirectly offered or sold in the United States (including its territories or possessions) or to or for the benefit of a U.S Person (being a "United State Person" within the meaning of Regulation S under the Securities Act of 1933 of the United States, as amended, and/or any person not included in the definition of "Non-United States Person" within the meaning of Section 4.7 (a) (1) (iv) of the rules of the U.S. Commodity Futures Trading Commission). No U.S federal or state securities commission has reviewed or approved this document and more generally any documents with respect to or in connection with the fund. Any representation to the contrary is a criminal offence. This document is of a commercial nature and not of a regulatory nature. This document does not constitute an offer, or an invitation to make an offer, from Société Générale, Lyxor Asset Management (together with its affiliates, Lyxor AM) or any of their respective subsidiaries to purchase or sell the product referred to herein. These funds include a risk of capital loss. The redemption value of this fund may be less than the amount initially invested. The value of this fund can go down as well as up and the return upon the investment will therefore necessarily be variable. In a worst case scenario, investors could sustain the loss of their entire investment. This document is confidential and may be neither communicated to any third party (with the exception of external advisors on the condition that they themselves respect this confidentiality undertaking) nor copied in whole or in part, without the prior written consent of Lyxor AM or Société Générale. The obtaining of the tax advantages or treatments defined in this document (as the case may be) depends on each investor's particular tax status, the jurisdiction from which it invests as well as applicable laws. This tax treatment can be modified at any time. We recommend to investors who wish to obtain further information on their tax status that they seek assistance from their tax advisor. The attention of the investor is drawn to the fact that the net asset value stated in this document (as the case may be) cannot be used as a basis for subscriptions and/or redemptions. The market information displayed in this document is based on data at a given moment and may change from time to time.

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