

TRUSTEES OF THE PUBLIC LIBRARY OF THE CITY OF BOSTON

Meeting of the Trustees Finance and Audit Committee

Thursday, January 16, 2020 at 8:00 a.m.
Central Library in Copley Square, Kirstein Business Library-Exchange
700 Boylston Street, Boston, MA 02116

AGENDA

- I. **Welcome**
Evelyn Arana-Ortiz, Chair
- II. **Review and Approval of Meeting Minutes from November 12, 2019**
Evelyn Arana-Ortiz, Chair
- III. **Review and Approval of Contracts**
Evelyn Arana-Ortiz, Committee Chair
- IV. **Interview prospective investment manager, Impax Asset Management, Thematic Equity Portfolio, focusing on global equity strategies.**
Sebastian Grzejka, NEPC
David Richardson, Executive Director, Impax Client Service and Business Development
Melissa Planter, Vice President, Impax Institutional Business Development
Nicola Fritz, Impax Portfolio Specialist

** A vote to recommend approval to the Board of Trustees may follow accordingly.*
- V. **New Business**
- VI. **Public Comment**
- VII. **Adjournment**

Next meeting is scheduled for Thursday, March 12, 2020 at Central Library, 8:00 a.m.
**Meeting is subject to change*

Trustees of the Public Library of the City of Boston

Robert Gallery, Chair; Evelyn Arana-Ortiz, Vice Chair
Zamawa Arenas, Jabari Asim, Ben Bradlee, Jr., Cheryl Cronin, Linda Dorcena Forry,
Priscilla Douglas, John Hailer, Jeff Hawkins, Rep. Chynah Tyler

President, David Leonard
Clerk of the Board, Pamela Carver

This is an open meeting; the public is welcome to attend; for information: www.bpl.org

TRUSTEES OF THE PUBLIC LIBRARY OF THE CITY OF BOSTON

Meeting of the Trustees Finance and Audit Committee

Tuesday, November 12, 2019 at 8:00 a.m.
Central Library in Copley Square, Kirstein Business Library-Exchange
700 Boylston Street, Boston, MA 02116

DRAFT MINUTES

A meeting of the Boston Public Library Trustees Finance and Audit Committee was held on Tuesday, November 12, 2019 at the Central Library in the Kirstein Business Library-Exchange.

Members present at the meeting included: Committee members, John Hailer, Jeff Hawkins, and President David Leonard. Not present: Zamawa Arenas and Committee Chair Evelyn Arana-Ortiz (who participated via conference call).

Also present were Boston Public Library staff including Ellen Donaghey, Chief Financial Officer, Pamela Carver, Clerk of the Board, other BPL staff members, and members of the public.

The meeting of the Trustees Finance and Audit Committee (“Committee”) was called to order at 8:05 a.m. by Ms. Arana-Ortiz with a roll call and determined there was a quorum. Ms. Arana-Ortiz welcomed Trustee Jeff Hawkins to his first committee meeting since being appointed. She noted for the record that she was not be eligible to vote since she was not physically present and participating via conference call. The first matter of business was review and approval of Meeting Minutes from October 1, 2019. With no edits or comments, a motion was duly made, seconded and the meeting minutes were approved.

Next, Ellen Donaghey was asked to review the contracts. Ms. Donaghey explained the first contract is for an extension of the existing Retro conversion pilot that we just did. The contract is for eighty five thousand dollars (\$85,000) to extend the pilot for one more year. She explained that the Library intends to use the data from this pilot to ask the City for capital funding for a larger retroconversion project. Mr. Tom Blake, Manager of Content Discovery, explained that since March, his team has been working with The Donohue Group who were awarded the bid for the Retro Conversion Pilot program. He explained that this process involves going through a substantial number of the BPL’s older books that are not in the electronic card catalogue. This pilot is designed to generate statistics and numbers to get an accurate idea of how to proceed with extending this project. He went on to say when the original RFP was presented, there were only 2 companies that responded and The Donohue Group received the highest score in the evaluation process. He explained that the BPL has worked with them in the past and have a great deal of confidence in their work. To avoid having to retrain a new company and doing a whole new RFP, the hope is to extend this pilot program by one year and maintain continuity. The collection that is being drawn into this project includes those from the call number classifications of both Library of Congress and old BPL call numbers (which pre-date all other systems and are some of the BPL’s original books) They The old BPL call numbers are outside of the rare books collections, but can be considered our “foundation collection” in many ways. The early statistics show that 20% of them are not in our card catalogue and around 5% may not be catalogued anywhere which may mean we uniquely hold some of these titles. This additional year will allow his team to determine exact number of books to allow a better representation of the statistics across the entire collection and not just pockets, to give more accurate predictions as to when this can be done and estimated costs to complete the project if it is to be considered for a capital project moving forward. There were a few questions asked in regards to the deliverables of this project. Mr. Blake explained they are already seeing some benefits from the work done, and explained moving forward they have dual priorities; to make sure that books can be accessioned into the high density storage and in turn save on a lot of space. Second, outside of rare books, these are the oldest books in our collection and once catalogued, it will be easier to determine which of them should be moved into more secure environments.

VOTED: “that, the Trustees Finance and Audit Committee of the Boston Public Library approve The Donahue Group, Incorporated of 41 Mechanic Street, Windsor Connecticut 06095 for the second phase of the Retrospective Conversion pilot program contract in the amount of eighty four thousand nine hundred ninety nine dollars and eighty six cents (\$84,999.86) to create and upload MARC records for Boston Public Library books not presently represented in the Library’s online catalog.”

Ms. Donaghey explained the next vote is to approve a contract with EdTech Strategies, a firm the Library has worked with for the last two years to assist with the eRate funding submission. It is for forty thousand dollars (\$40,000). With no questions a motion was duly made, seconded and

VOTED: “that, the Trustees Finance and Audit Committee of the Public Library of the City of Boston approve a contract with EdTech Strategies, LLC of 4805 147th Street, Urbandale, Iowa 50323, in the amount of forty thousand dollars (\$40,000) to assist with the development of the eRate Funding Year 2020 submission.”

Ms. Donaghey then discussed a contract with Arrowstreet, Inc., an architectural and design firm that worked on the design for the Johnson Project. In response to patron requests, the Library is working with The CATERED Affair (TCA) to begin selling gift items in the Newsfeed Café. Arrowstreet had approached the Library approximately two years ago with some design ideas. The Library worked with Arrowstreet and incurred just under \$10,000 in costs for the first iteration of items for sale. This proposed contract would allow us to exceed the \$10,000 threshold. The Library used a high estimate and believes that this will be a sufficient amount of funding for the coming year and beyond. no questions, a motion was duly made, seconded, and

VOTED: “that, the Trustees Finance and Audit Committee of the Public Library of the City of Boston approve Arrowstreet Inc. of 10 Post Office Square Boston, Massachusetts 02109, an architecture and design company, for a contract in the amount of forty thousand dollars (\$40,000) to provide design services for items to be sold at the Boston Public Library gift store.”

The next was the snow plowing contract for forty thousand dollars (\$40,000). She explained this amount has been determined to be a sufficient amount to get through the winter season. The BPL has an obligation to open to the public the day after a storm, and additional capacity beyond facilities staff is needed to make sure all 25 locations are plowed in a timely manner helps. She explained we hire one company Anzalone Construction that we have used for several years. A motion was duly made, seconded, and

VOTED: “that, the Trustees Finance and Audit Committee of the Public Library of the City of Boston approve a contract with Anzalone Construction, PO Box 2622, Woburn, Massachusetts 01888, in the amount of forty thousand dollars (\$40,000) to plow certain Boston Public Library Properties.”

Moving on, Ms. Donaghey explained the BPL is looking into the Northeastern University co-op program to hire a communications student for fifteen thousand dollars (\$15,000) to work with the Communications team. Lisa Pollack, Chief of Communications, noted that, unlike interns, the co-op student will work 32-35 hours per week for 6 months, and was confident the co-op program would be an appropriate fit for improving her team’s capacity to raise BPL’s profile. A motion was duly made, seconded, and

VOTED: “that, the Trustees Finance and Audit Committee of the Public Library of the City of Boston approve a pilot program with the Cooperative Education program at Northeastern University, 360 Huntington Avenue, Boston, MA in the amount of fifteen thousand dollars (\$15,000). The purpose of this pilot program will be to provide career experience to a Northeastern student for six months, and to offer Library departments the opportunity to undertake small projects for which they would not otherwise have the capacity.”

The final vote was for an open contract for book cleaning and mold remediation with Belfor Property Restoration. Ms. Imscher explained they have used this vendor in the past, most recently for books that were being moved into storage during the Rare Books renovation. In this particular instance, the Library is asking for authorization up to one hundred thousand dollars (\$100,000). The Collections Division is working an RFP to bid book cleaning and mold remediation work but in the interim, needs the ability to respond to mold outbreaks in a timely fashion. The committee had some discussion and asked several questions regarding mold remediation and the need for cleaning the collections in the future. The Committee determined they prefer to get quarterly updates to report back to the full Board of Trustees regarding this matter. With no further discussions, a motion was duly made, seconded and

VOTED: “that, the Trustees Finance and Audit Committee of the Public Library of the City of Boston authorize a contract with BELFOR Property Restoration at 138 Bartlett Street, Marlborough, MA 01752, not to exceed one hundred thousand dollars (\$100,000) to respond as needed to clean certain items in the Research Collection, authorization to end with award to vendor selected through an open bid process.”

Next, Ms. Arana-Ortiz called on Sebastian Grzejka of NEPC to review the BPL’s Asset allocation Impact Related investments. He explained this conversation is a continuation from the last few committee meetings. NEPC agreed to review the BPL’s asset allocations as it relates to exposure in areas such as fossil fuel holdings. The discussion is concerning whether an active manager which would seek to achieve both a financial return and societal contributions. Mr. Grzejka stated NEPC is recommending the committee consider Impax Asset Management, which has two potential funds that would fit this category. A second manager had been under consideration but changes at the firm resulted in NEPC withdrawing the recommendation. Mr. Grzejka explained the committee will need to make a two part decision, the first is a reaffirmation of the asset allocation approach overall and the second is whether to hire an active manager for this portion of the portfolio.

Mr. Grzejka reviewed the BPL’s portfolio noting that the endowment had great overall results over the last quarter from a performance basis. He gave a brief background on how the markets have been trending and performance over the last year.. He went on to discuss the benefits of active and passive management as well as some predictions on the market as well as the need to look at investments from the perspective of diversification of investments and the benefits of a long term view rather than looking at short term fluctuations. He reviewed the current target which represents a conservative return approach. The portfolio was recently adjusted to achieve a stronger risk adjusted return and be better positioned to take advantage of current market opportunities given recent discussions around impact investing and the potential for resulting manager changes, NEPC profiled two options for consideration should this occur. Mix A which looks to achieve a dual goal of maintaining the current risk and return profile, as well as including an allocation to impact strategies through a global equity allocation. In order to achieve the desired characteristics, both US and Non US equity have been reduced in favor of Global equity, which has the ability to allocate across both regions. Mix B represents a slightly more aggressive mix, however, also incorporates the impact investing theme through the global equity allocation. Further this mix increases equity overall, adjusts fixed income towards higher quality core bonds and lastly reduces GAA.

The resulting portfolio has a slightly higher return target to current, along with a higher standard deviation.

Mr. Grzejka reviewed the two manager for consideration, Wellington and Impax. As noted above, Wellington is no longer recommended as two founding partners have recently left the firm. Impax was founded in response to the many global issues and trends affecting the world approximately 30 years ago. They use both top down and bottom up research. From the top down they will use screens (and themes) to make sure each company fits various criteria.

The Committee went on to discuss each of the options and agreed with the proposed Mix A, and to bring in Impax Management. The Committee will interview the manager at the next meeting and bring their recommendation to the Board of Trustees for a vote.

Ms. Arana-Ortiz asked for new business for which there was none. She asked for Public Comment. David Vieira of the City-Wide Friends Group noted that the address of the plowing contract was a PO Box and that vendors should use a full address.

With no further business, the meeting was adjourned at 9:09 a.m.

Respectfully submitted,

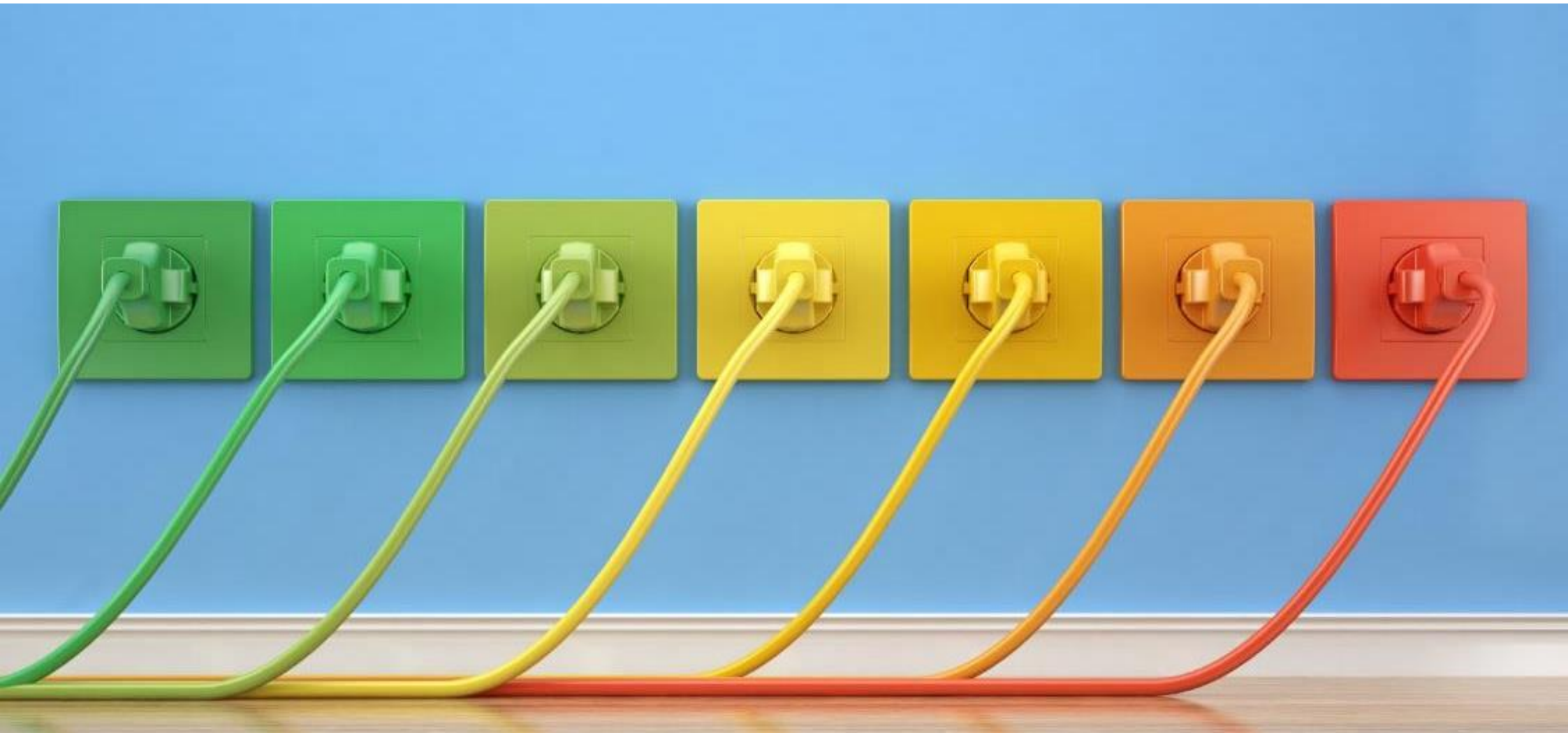
Pamela R. Carver

Specialists Strategy

Presentation to the Boston Public Library and NEPC

January 16, 2020

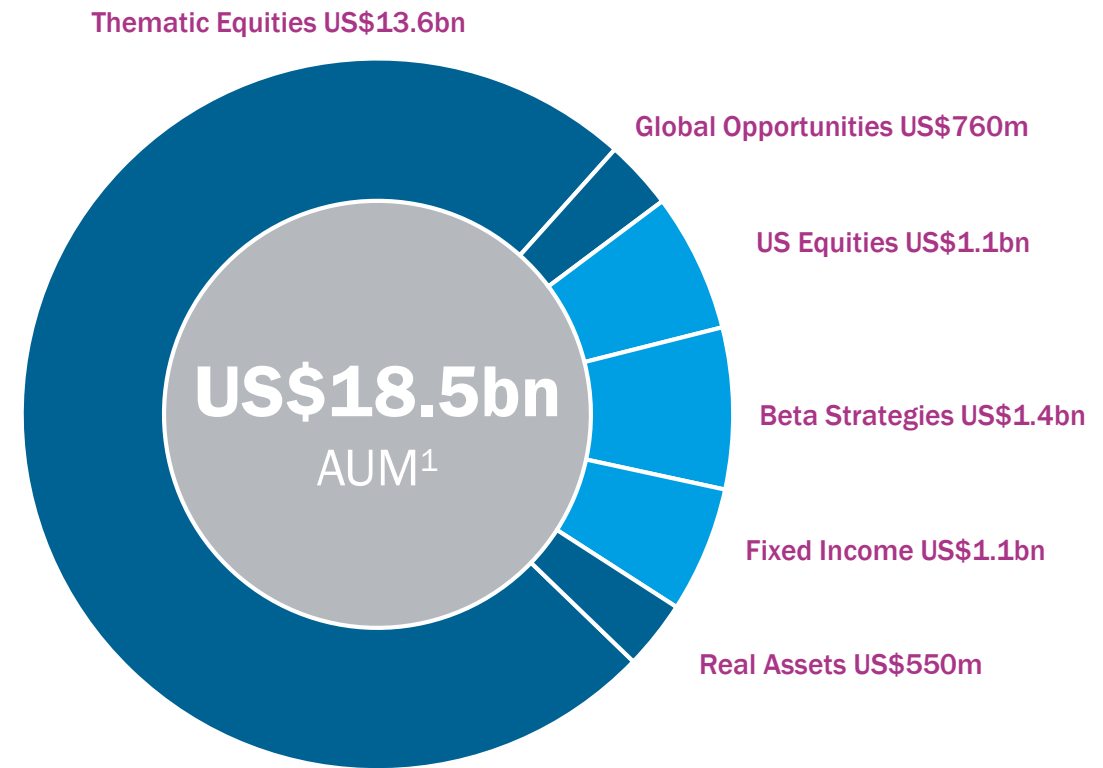
FOR PROFESSIONAL INVESTORS ONLY – THIS DOCUMENT IS A MARKETING COMMUNICATION.



Specialists in the transition to a more sustainable economy

Impax Asset Management - overview

- Specialist manager, over 20 years' experience
- Over 55 investment team members (UK, US, HK)
- Global distribution and client relations
- High quality investment solutions for institutional and individual investors
- Partnership approach with clients

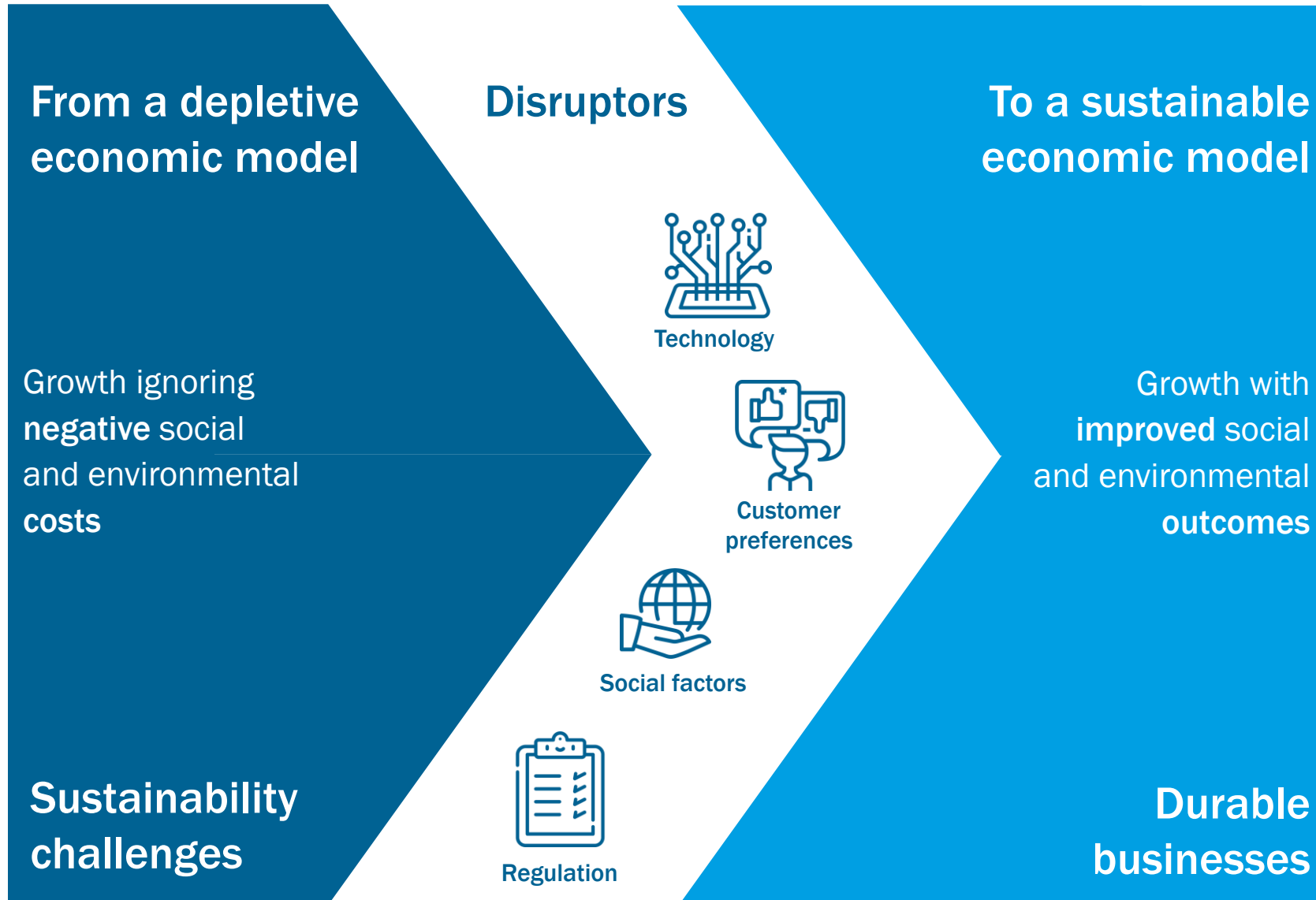


London managed // US managed²



¹As at 30 September 2019. Assets under advice represent ~3%. Total of asset classes may differ due to rounding. ²US managed AUM refers to Pax World Funds. Impax acquired Pax World Management LLC on 18 January 2018. Company and AUM history includes private equity/sustainable property funds, and advisory accounts which are not included as part of Impax's GIPS compliant business. This information is presented as supplemental to the Annual Disclosure Presentation which can be found at the back of this presentation.

Impax believes the economy is in transition



Transitions create losers and winners



Source: Shutterstock/Unsplash.

Impax's classification of Environmental Markets

New Energy



Energy Efficiency

- Power Network
- Industrial
- Buildings
- Transport
- Consumer

Alternative Energy

- Developers/IPPs
- Solar
- Wind
- Biofuels
- Other

Water



Water Infrastructure/ Technologies

- Infrastructure
- Treatment
- Utilities

Pollution Control

- Pollution Control Solutions
- Testing & Gas Sensing
- Public Transportation

Sustainable Food, Agriculture & Forestry



- Sustainable & Efficient Agriculture
- Logistics, Food Safety & Packaging
- Sustainable Forestry
- Nutrition

Waste/Resource Recovery



Waste Management & Technologies

- Tech Equipment
- Recycling & Processing
- Hazardous
- General

Environmental Support Services

- Consultancies
- Carbon & Asset Trading
- Diversified Environmental

Adopted by FTSE as a basis for Environmental Technologies and Environmental Markets index series since 2007.

Investing in climate solutions

MITIGATION



Companies that enable us to **mitigate** climate change by reducing our environmental impact.

For example, companies active within:

Energy efficiency

Methane reduction

Renewable energy

Agricultural efficiency

ADAPTATION



Companies that enable us to **adapt** to meet the challenges of a changing climate.

For example, companies active within:

Water infrastructure

Back-up power

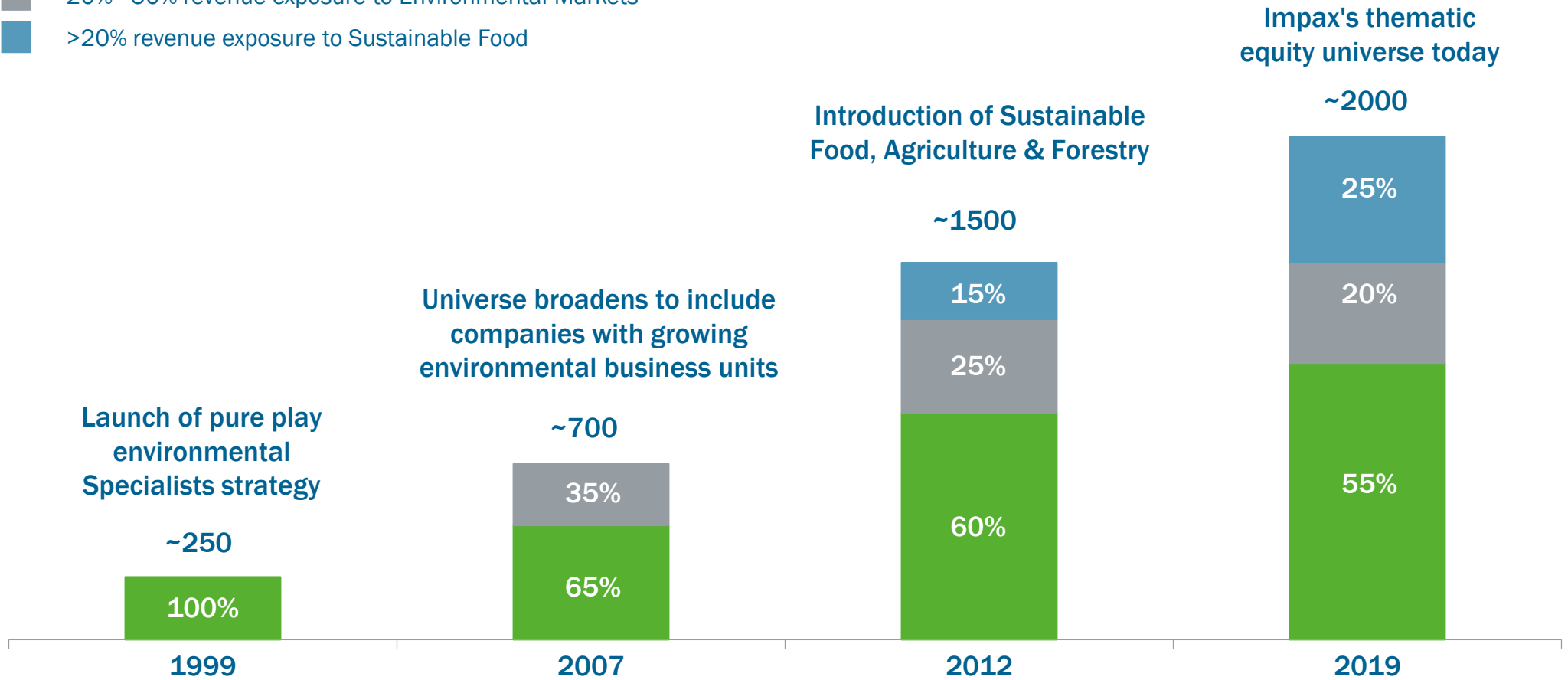
Grid strengthening

Food production

The 20-year transformation of the Environmental Markets

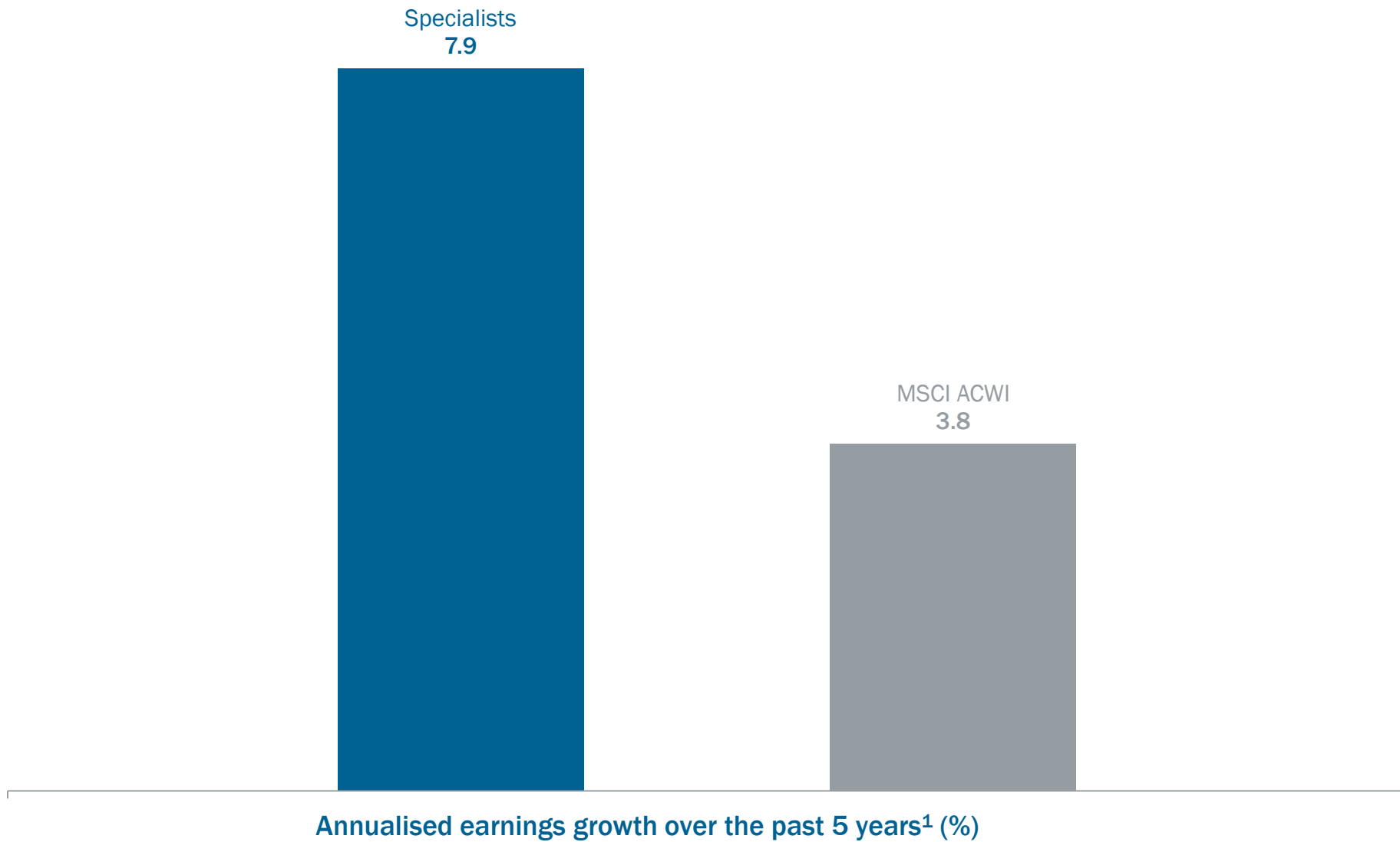
Number of companies in Impax's thematic equity universe

- >50% revenue exposure to Environmental Markets
- 20% - 50% revenue exposure to Environmental Markets
- >20% revenue exposure to Sustainable Food



Source: Impax Asset Management. Data as at 30 September 2019.

Impax Specialists strategy has delivered superior growth



These figures refer to the past. Past performance is not a reliable indicator of future results. The value of investments can fall as well as rise and you may get back less than you have invested. As at 31 December 2018. Source: Factset. Data relates to a representative account for each strategy. ¹Implied earnings growth for a given year has been calculated from the change in estimated price-only performance in USD, divided by the change in price-to-earnings multiple over the same period. Estimated price-only performance has been computed from the USD total return, adjusting for the dividend yield, where price-only returns in USD have not been available.

Experienced, multidisciplinary investment team

- Over 20 listed equity specialists in UK, HK, US
- Stable team with breadth and depth of experience
- Average Investment experience: over 15 years; Environmental: over 10 years
- Consistent investment process developed since 1999
- Collegial approach encourages strong idea generation
- Dedicated risk specialists provide sounding board/challenge
- Access to over 30 colleagues across asset classes

Specialists portfolio construction team



Bruce Jenkyn-Jones
Co-Portfolio Manager



Jon Forster
Co-Portfolio Manager



Justin Winter
Member of portfolio construction team



Fotis Chatzimichalakis
Member of portfolio construction team



Lisa Beauvilain
Head of Sustainability & ESG



Simon Higgo
Head of Investment Risk & Process

Impax Listed Equities Teams

Co-Heads of Listed Equities

Investment Risk & Process

Sustainability & ESG

Trading

Portfolio Specialists



Bruce Jenkyn-Jones
Co-Head & Senior
Portfolio Manager



Simon Higgo
Head of Investment
Risk & Process



Lisa Beauvilain
Head of
Sustainability & ESG



Dean Palin
Head of Trading



Nicola Fritz
Portfolio Specialist



Hubert Aarts
Co-Head & Senior
Portfolio Manager



Paolo Macri
Investment Risk
& Process



**Miriam Benarey-
Meisel**
Sustainability &
ESG Specialist



Danielle Fregeau
Trader



Harry Boyle
Portfolio Specialist

Listed Equities



Jon Forster
Senior Portfolio
Manager



David Li
Senior Portfolio
Manager



Michael Landymore
Senior Portfolio
Manager



Kirsteen Morrison
Senior Portfolio
Manager



David Winborne
Senior Portfolio
Manager



Sid Jha
Portfolio Manager



Justin Winter
Portfolio Manager



Oscar Yang
Portfolio Manager &
Research Analyst



Agne Rackauskaite
Research Analyst



**Fotis
Chatzimichalakis**
Research Analyst



Luciano Lilloy
Research Analyst



Evie Paterson
Research Analyst

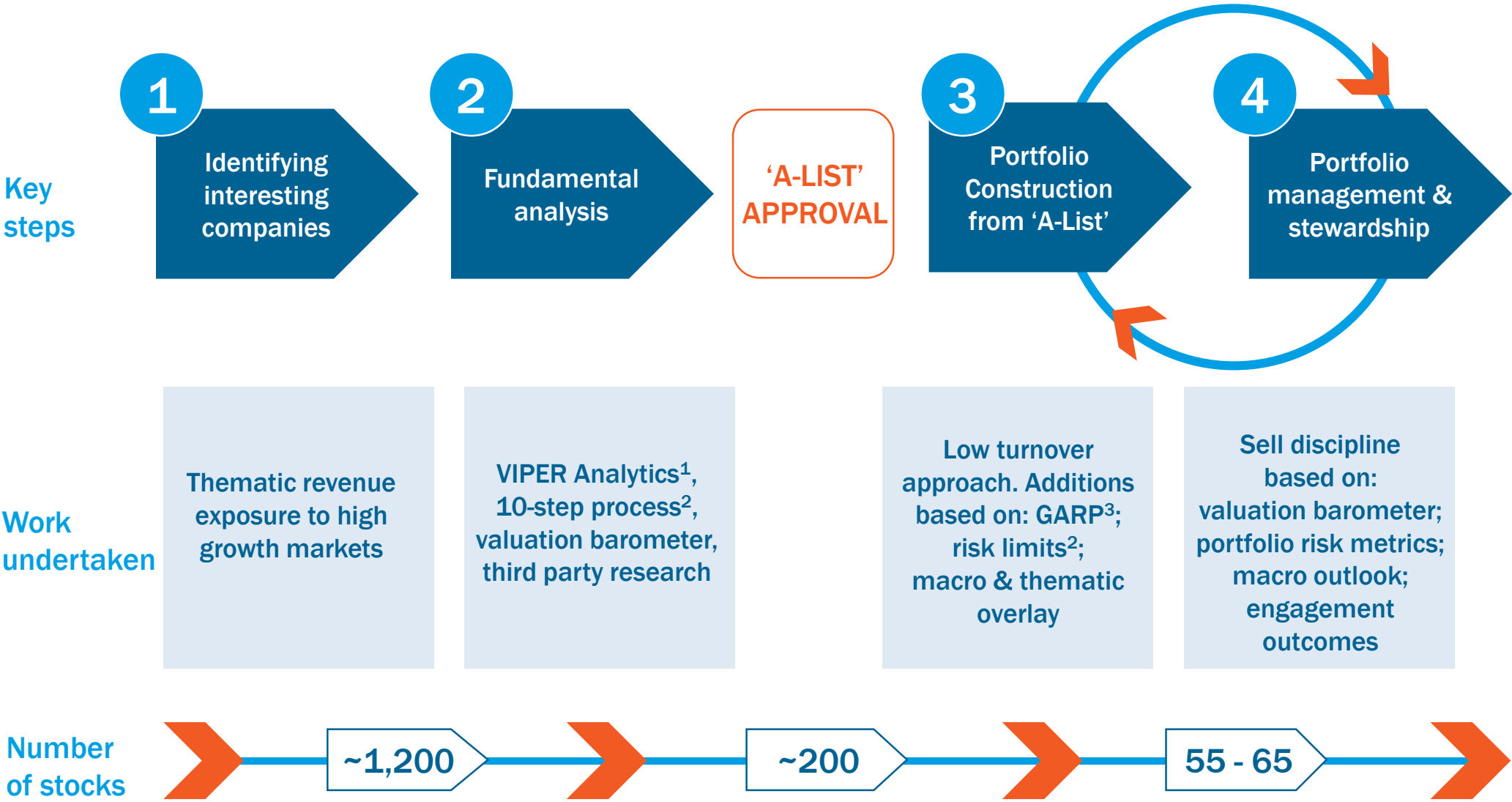


Adam Liang
Research Analyst



Chris Eccles
Research Analyst

Proven thematic investment process

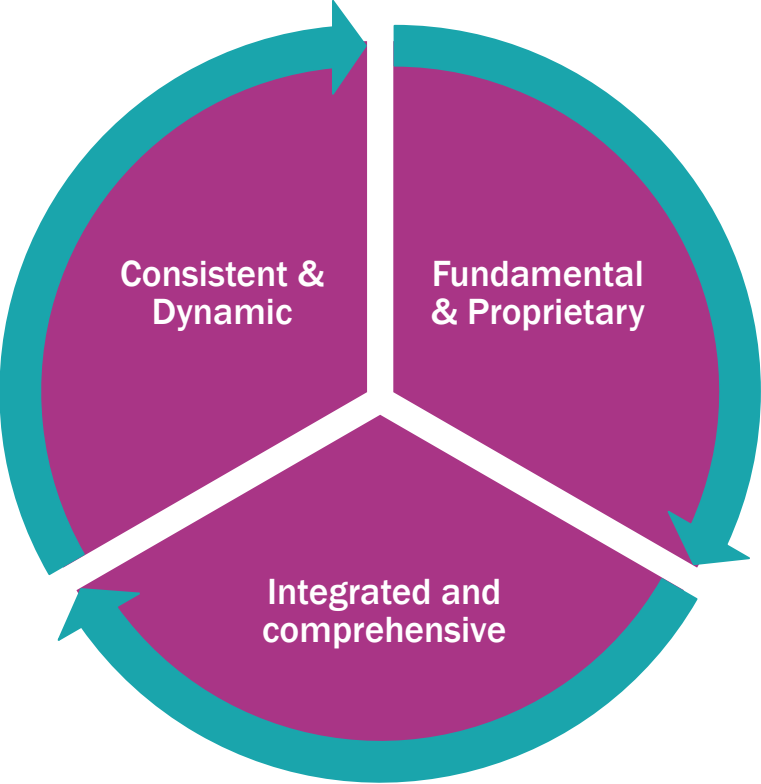


¹VIPER Analytics: Proprietary financial quality, valuation and risk platform. ²Incorporating ESG. ³GARP: Growth at a Reasonable Price.

ESG research: integrated risk management tool

ESG METHODOLOGY:

ANALYSIS OF:



Governance - Analysed vs country level

- Based on proprietary ranking of countries' governance quality
- Provides oversight and accountability

Environmental & Social Risks - Analysed at company level

- How strong are E&S policies, processes, and incentives to manage the most material risks for a company?

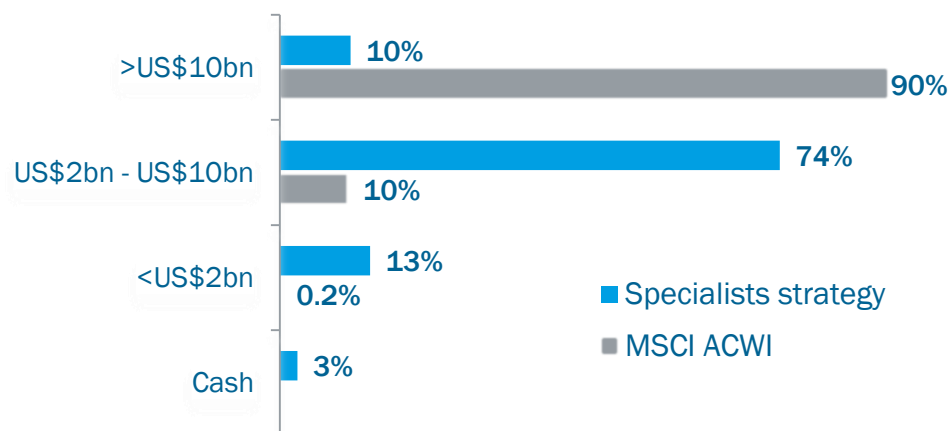
Controversies - Analysed at company level

- Track record of past issues, performance, and company controversies
- How company responds to problems

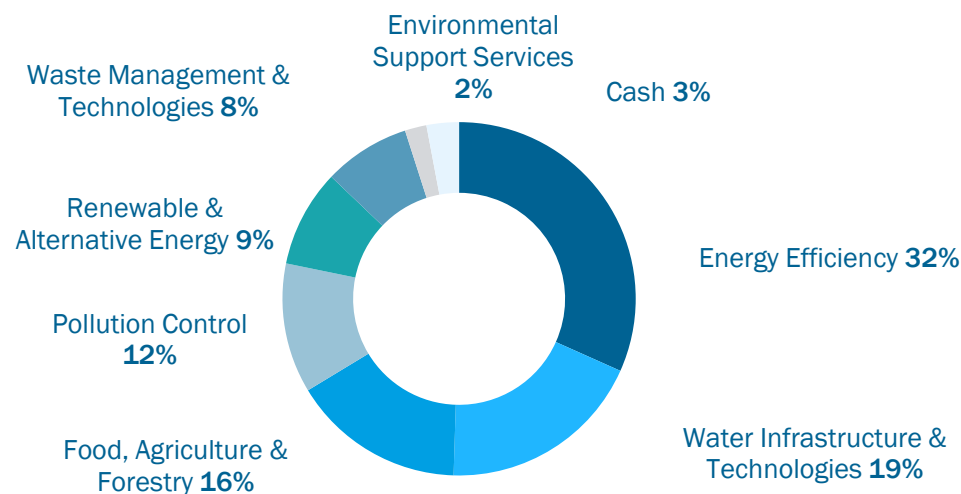
Proprietary ESG review and score

Specialists strategy - relative positioning

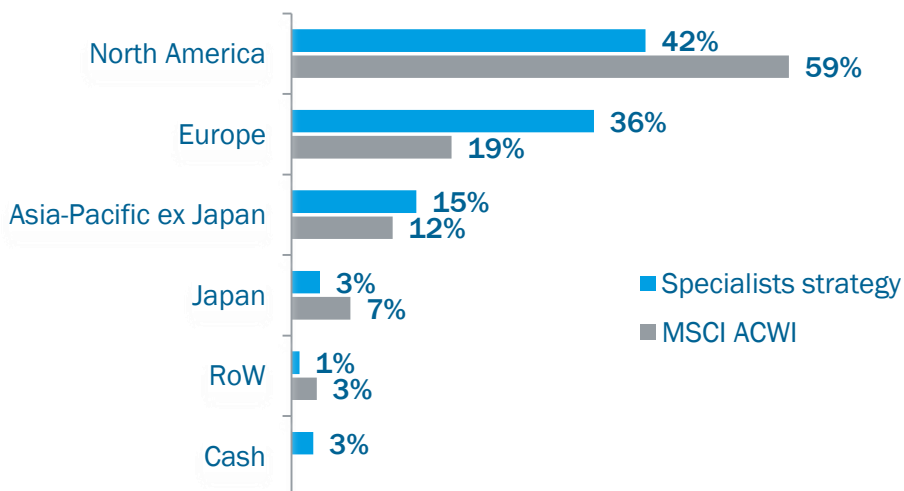
MARKET CAP¹ (WTD AV²: US\$5.9BN VS ACWI: US\$164BN)



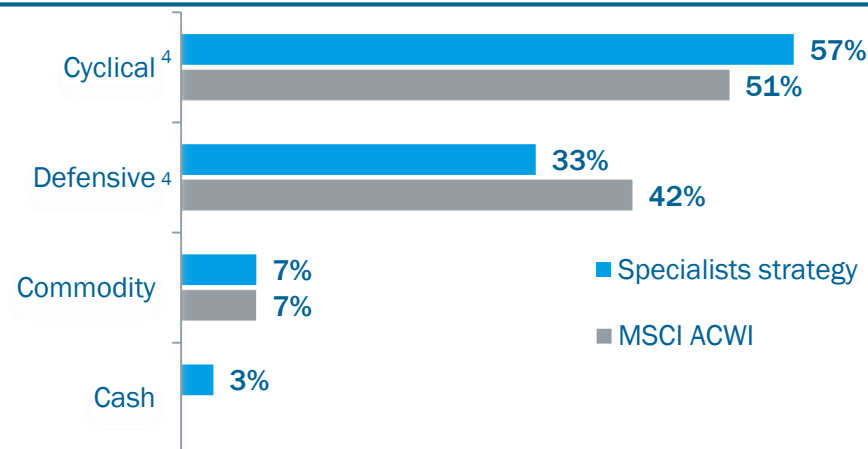
BROADLY DIVERSIFIED ACROSS ENVIRONMENTAL MARKETS



GLOBAL PORTFOLIO³



EXPOSURE TO CYCLICAL AND DEFENSIVE END MARKETS



Source: Bloomberg. Data as at 30 September 2019. ¹Re-weighted to exclude private holdings. ²WTD AV: weighted average. ³Geographic allocation by country of listing, MSCI classification if available. ⁴Stability of demand during economic upturns and downturns. Data may not add up to 100% due to rounding. This information is presented as supplemental to the Annual Disclosure Presentation which can be found at the back of this presentation.

Specialists strategy - top ten holdings

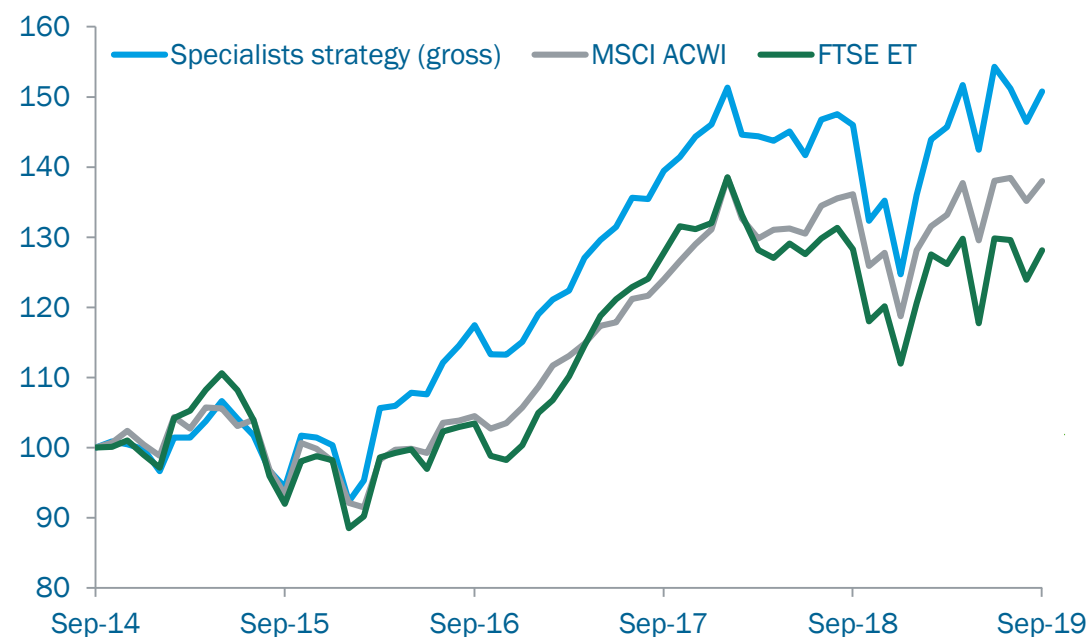
STOCK	SUB-SECTOR	COUNTRY ¹	%
Generac Holdings	Power Network Efficiency	US	2.8
EDP Renovaveis	Renewable Energy Developers & IPPs	Portugal	2.6
Rayonier	Sustainable Forestry & Plantations	US	2.5
DS Smith	Recycling and Value Added Waste Processing	UK	2.5
Clean Harbors	Hazardous Waste Management	US	2.3
Brambles	Waste Technology Equipment	Australia	2.3
Ormat Technologies	Renewable Energy Developers & IPPs	US	2.3
Horiba	Environmental Testing & Gas Sensing	Japan	2.2
Pentair	Water Treatment Equipment	US	2.2
Lenzing	Sustainable & Efficient Agriculture	Austria	2.1
TOTAL			23.8

Source: Bloomberg. Data as at 30 September 2019. Total is subject to rounding. Top 10 by weighting. ¹Geographic allocation by country of listing, MSCI classification if available.

Specialists strategy - performance to end of September 2019 (USD)

ANNUALISED PERFORMANCE (%)

	1Y	3Y	5 Y	10Y	15Y
Strategy (gross)	3.3	8.7	8.6	7.8	9.1
Strategy (net)	2.2	7.5	7.4	6.6	8.0
FTSE ET Index ¹	-0.1	7.4	5.1	3.0	-
MSCI ACWI	1.4	9.7	6.7	8.3	7.1

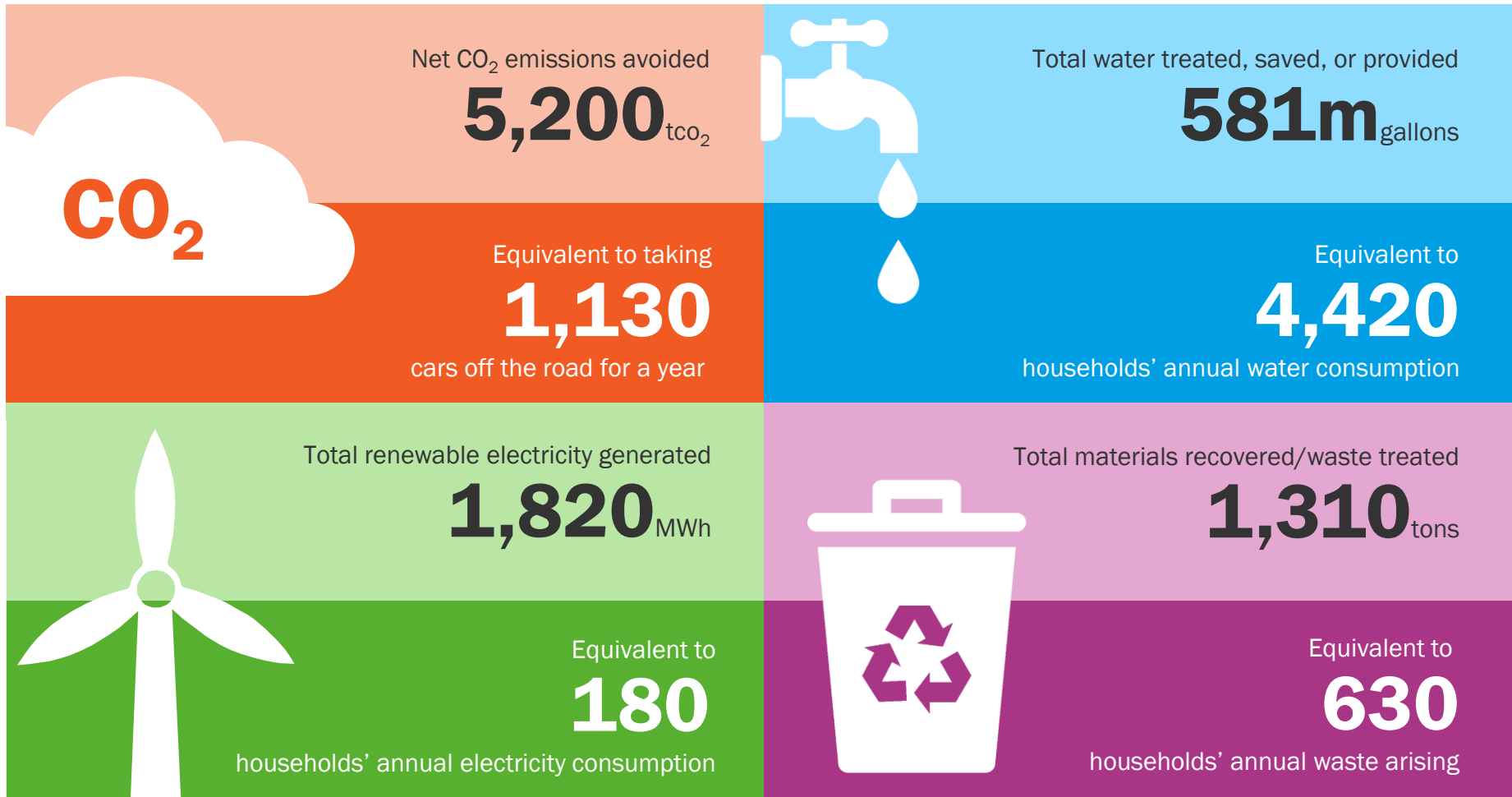


HISTORICAL PERFORMANCE (%)

	2019 YTD	2018	2017	2016	2015	2014
Strategy (gross)	20.9	-14.6	26.9	14.7	0.5	-3.7
Strategy (net)	19.9	-15.5	25.5	13.5	-0.6	-4.7
FTSE ET Index ¹	14.4	-15.2	31.6	2.2	-0.8	-2.0
MSCI ACWI	16.2	-9.4	24.0	7.9	-2.4	4.2

These figures refer to the past. Past performance is not a reliable indicator of future results. The value of investments can fall as well as rise and you may get back less than you have invested. All data is in USD as at 30 September 2019. Composite figures are presented both gross and net of management fees and include the reinvestment of all income. MSCI index is total net return (net dividend reinvested), FTSE index is total return (gross dividend reinvested). Source: FactSet/WM Reuters. ¹FTSE ET performance is a combination of FTSE ET100 and FTSE ET50 indices. FTSE ET100 data shown from January 2014, previous data represents FTSE ET50. FTSE ET50 launched January 2008. Impax Asset Management Limited claims compliance with the Global Investment Performance Standards (GIPS®). Further information on composite data is available on request. Reference should be made to the Annual Disclosure Presentation which can be found at the back of this document.

Specialists strategy - environmental impact of US\$10m investment

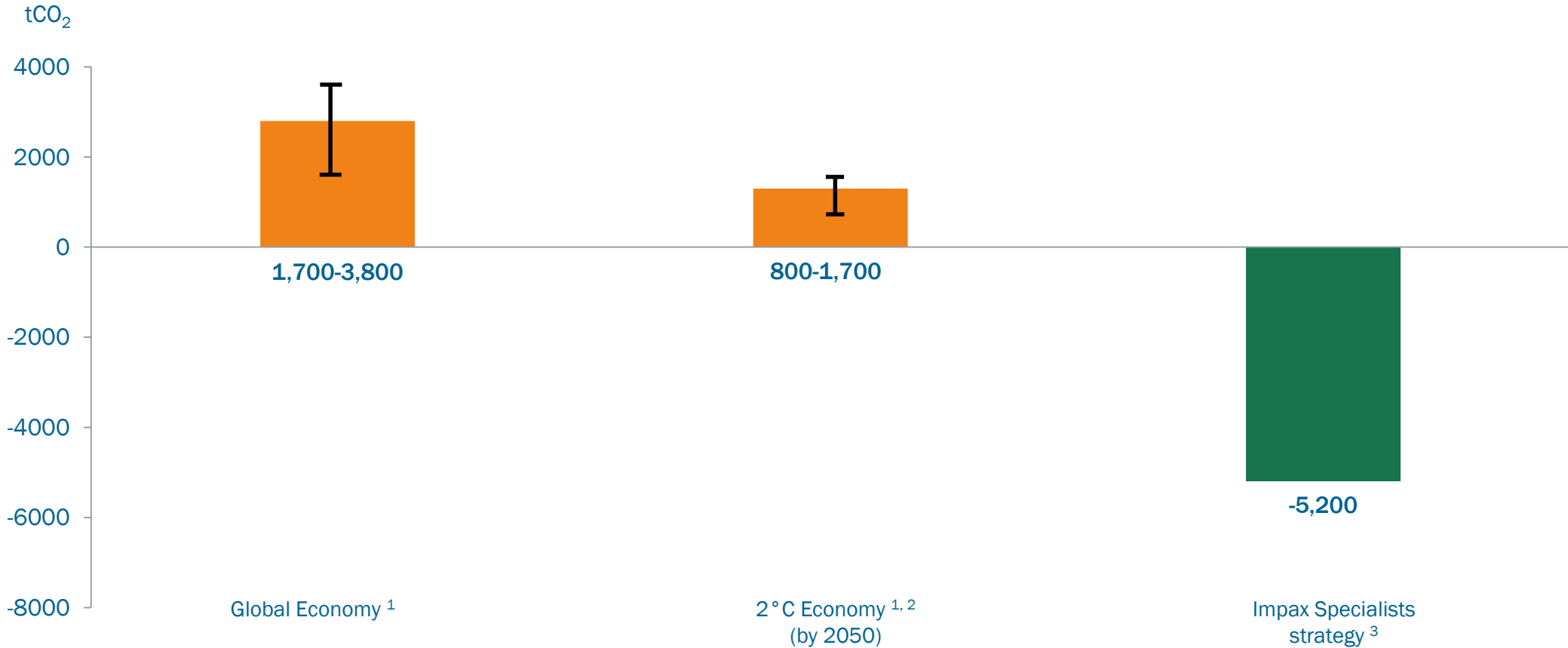


Source: Impax Asset Management.

These figures refer to the past. Past performance is not a reliable indicator of future results. Impact of US\$10m invested in the strategy for one year. Based on most recently reported annual environmental data for holdings in the Impax Specialists strategy as at 31 December 2018. Impax's impact methodology is based on equity value.

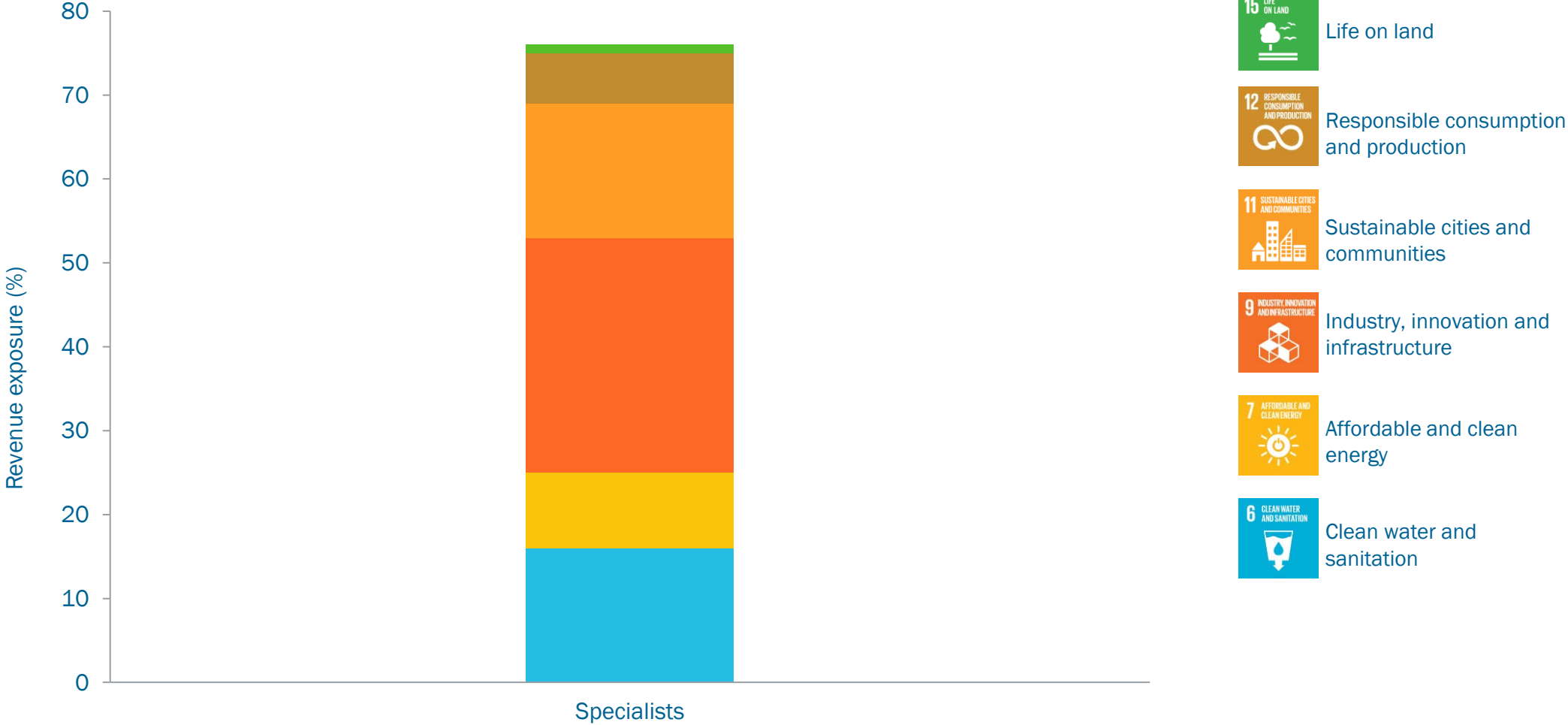
How strategies are contributing to the low carbon energy transition

NET CO₂ IMPACT PER US\$10M INVESTED FOR ONE YEAR



Past performance of a strategy is no guarantee as to its performance in the future. ¹Source: United Nations Framework Convention on Climate Change (UNFCCC), 2016. Aggregate effect of the intended nationally determined contributions: an update – synthesis report by the secretariat, McKinsey Global Institute, The Global Carbon Project, Haver, BIS, Deutsche Bank estimates and IMF, National Central Banks and Statistical Offices, Thomson Reuters. Black bars reflect the range of estimates of value invested. ²The upper limit for global temperature rise targeted by the Paris climate agreement. ³Impax Asset Management, 2019. Impax’s impact methodology is based on equity value.

Mapping Specialists to the UN Sustainable Development Goals



Source: Data as at 31 December 2018. Figures are based on Impax internal data.

Delivering a partnership beyond financial returns

Dedicated client service and financial reporting



Thought leadership research



Collaborative engagement and stewardship



Impact reporting



Appendix



Specialists strategy overview

The Impax Specialists strategy is a long-only global equity strategy that invests in stocks of small and mid-cap environmental services and technology companies

INVESTMENT APPROACH

Strategy type Long-only global equity

Investing style GARP¹

Predominant cap size Small and mid-cap

Thematic revenue exposure Min 50%

Universe / A-List ~1200 / ~200 companies

Holdings 55 - 65 stocks

Turnover ratio ~20 - 30% p.a.

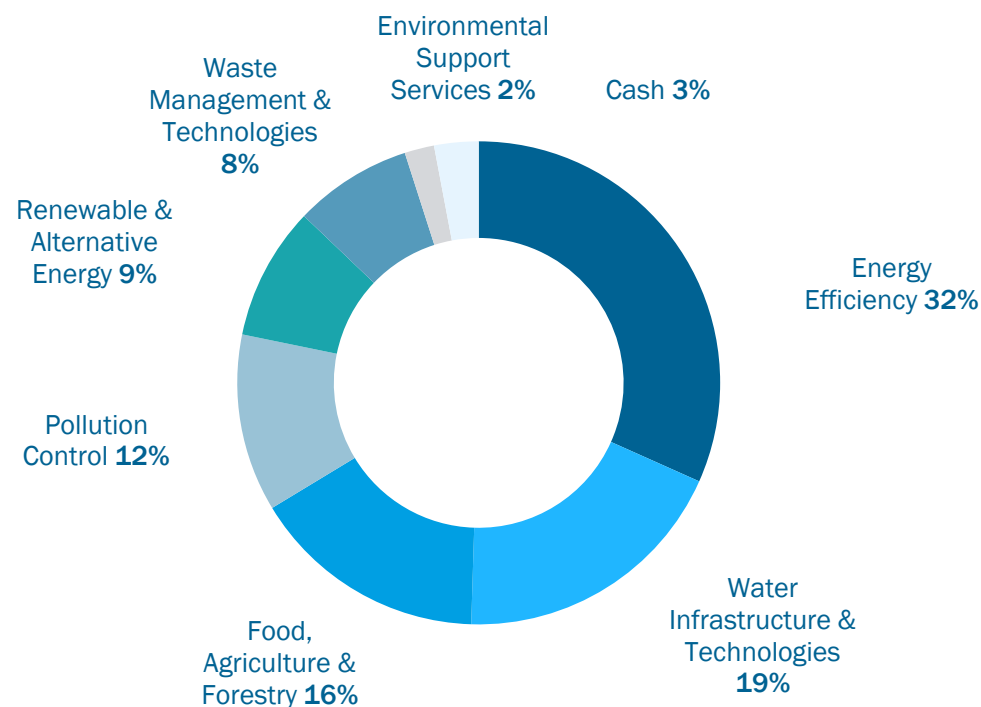
KEY CHARACTERISTICS

AUM US\$2.4bn²

Launch date March 2002

Portfolio managers Bruce Jenkyn-Jones, Jon Forster

BROADLY DIVERSIFIED ACROSS ENVIRONMENTAL MARKETS



¹GARP: growth at reasonable price. ²Data as at 30 September 2019. Total assets in the Specialists strategy excluding one mandate with significantly different objectives and weightings compared to the other Specialists Funds. Data may not add up to 100% due to rounding. This information is presented as supplemental to the Annual Disclosure Presentation which can be found at the back of this presentation.

Specialists strategy - risk characteristics

RELATIVE RISK MEASURES (EX-POST)	5 YEARS			10 YEARS		15 YEARS
	VS FTSE ET100	VS MSCI ACWI	VS FTSE ET INDEX ¹	VS MSCI ACWI	VS FTSE ET INDEX ¹	VS MSCI ACWI
Tracking error (% p.a.)	5.0	5.2	5.9	6.2	8.0	8.1
Alpha (% p.a.)	4.0	1.6	5.0	-0.9	4.0	1.4
Beta	0.86	1.06	0.83	1.08	0.79	1.15
Information ratio	0.7	0.4	0.8	-0.1	0.4	0.3

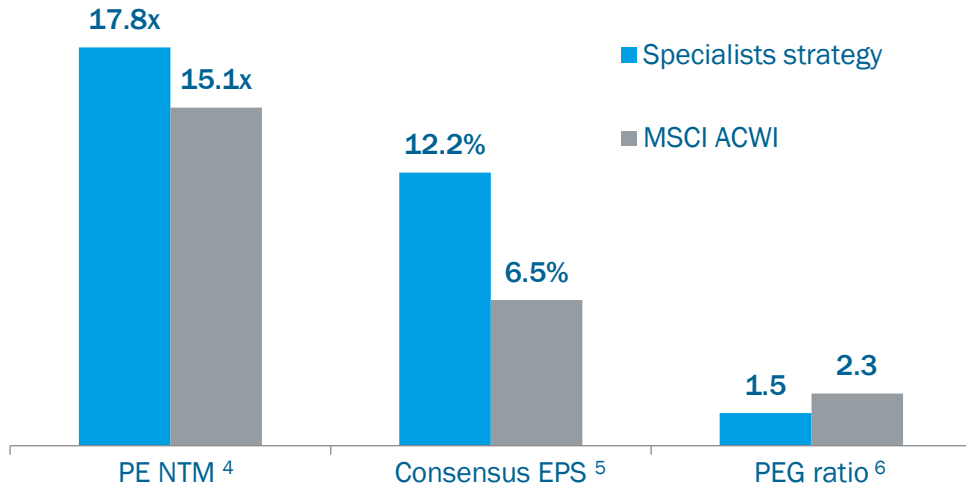
	FTSE ET100	MSCI ACWI
Active share (%)	73.5	99.6

ABSOLUTE RISK MEASURES (5 YEARS)	SPECIALISTS	FTSE ET100	MSCI ACWI
VaR ^{2,3} (5D, 95%, ex-ante)	2.8	3.3	2.7
Volatility (% annualised std dev, ex-post)	13.3	14.5	11.6
Sharpe ratio (ex-post)	0.6	0.3	0.5

Data calculated based on gross returns. Source: Factset/Bloomberg. Data as at 30 September 2019. ¹Data represents internal Impax ET50 index data until FTSE formally adopted the index in 2008. FTSE ET performance is a combination of FTSE ET100 and FTSE ET50 indices. FTSE ET100 data shown from January 2014, previous data represents FTSE ET50. The FTSE ET50 Index launched in January 2008. ²Source: Bloomberg Global Equity Fundamental Factor Model. ³VaR: value at risk. This information is presented as supplemental to the Annual Disclosure Presentation which can be found at the back of this presentation.

Specialists strategy - relative valuation

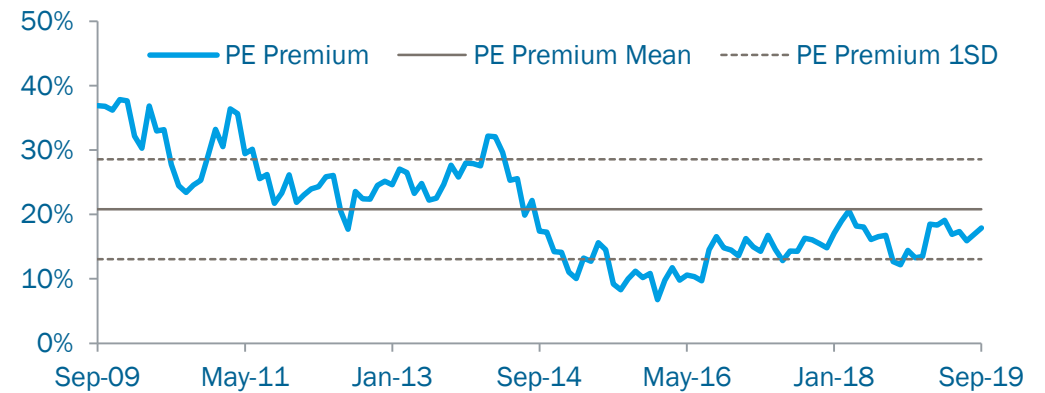
FUNDAMENTALS (NTM)^{1, 2}



HISTORICAL PE³



PE PREMIUM



¹These are forward looking numbers and there is no guarantee that this valuation will be achieved. ²NTM: next twelve months. ³PE: price to earnings.

⁴PE NTM: forward price to earnings. ⁵EPS: earnings per share. ⁶PEG ratio: price/earnings growth ratio. ⁷PE premium: price to earnings premium. Source: FactSet/Bloomberg. Premium calculated using PE NTM vs MSCI ACWI as at 30 September 2019. This information is presented as supplemental to the Annual Disclosure Presentation which can be found at the back of this presentation.

Outlook

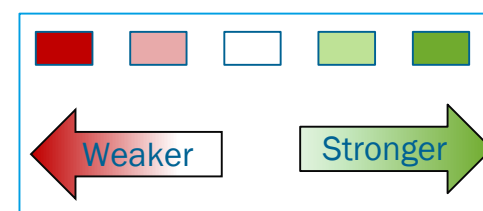
- Market volatility to persist given trade and geopolitical tension, and slowing global growth
- Catalysts continue to drive earnings of environmental markets:
 - Economics of resource efficiency continue to improve, delivering cost savings to end users
 - Consumer demand for EVs, alternative packaging and nutritious food gaining momentum
 - Disruptive events driving policy on emissions as well as single use plastic
- Emerging investment opportunities in
 - Industrial ‘internet-of-things’ and biochemicals
 - Climate change adaptation (as well as CO₂ emission mitigation)
- Portfolio positioned to manage volatility, albeit with high tracking error to global equities

¹EVs: electric vehicles.

Thematic overlay

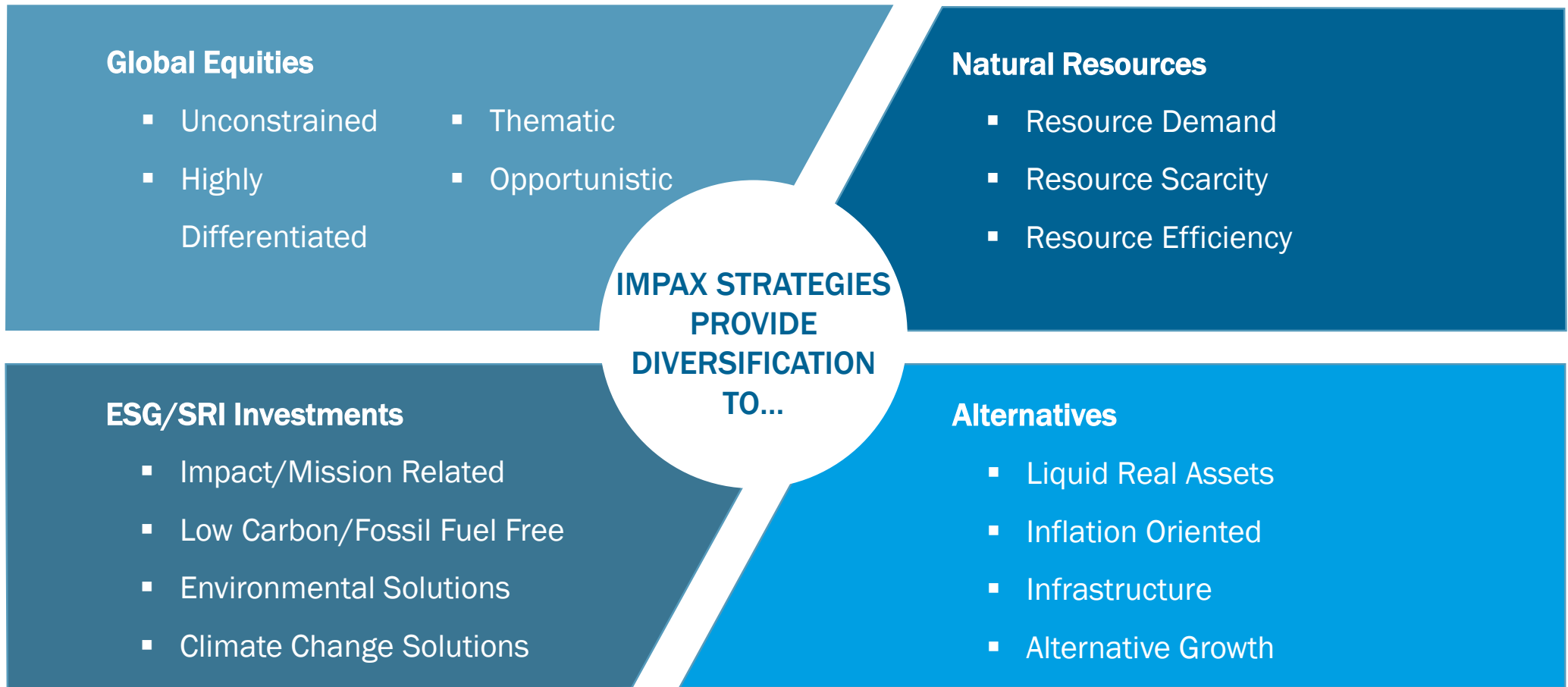
Environmental subsector	Market Conditions	Legislation & Policy	Relative Valuation	Relative Earnings Momentum	Investment View
Water Infrastructure				⇒	
Water Treatment Equipment				⇒	
Waste Technology Equipment				⇓	
Recycling and Value Added Waste Processing				⇓	
Hazardous Waste Management				⇓	
Environmental Consultancies				⇑	
Wind Power Generation Equipment				⇓	
Solar Energy Generation Equipment				⇓	
Renewable Energy Developers & IPPs				⇒	
Biofuels					
Power Network Efficiency				⇒	
Industrial Energy Efficiency				⇓	
Buildings Energy Efficiency				⇒	
Transport Energy Efficiency				⇓	
Consumer Energy Efficiency				⇓	
Water Utilities				⇒	
Pollution Control Solutions				⇓	
Environmental Testing & Gas Sensing				⇒	
Public Transportation				⇒	
General Waste Management				⇒	
Sustainable & Efficient Agriculture				⇓	
Logistics, Food Safety & Packaging				⇒	
Sustainable Forestry & Plantations				⇓	

LEGEND



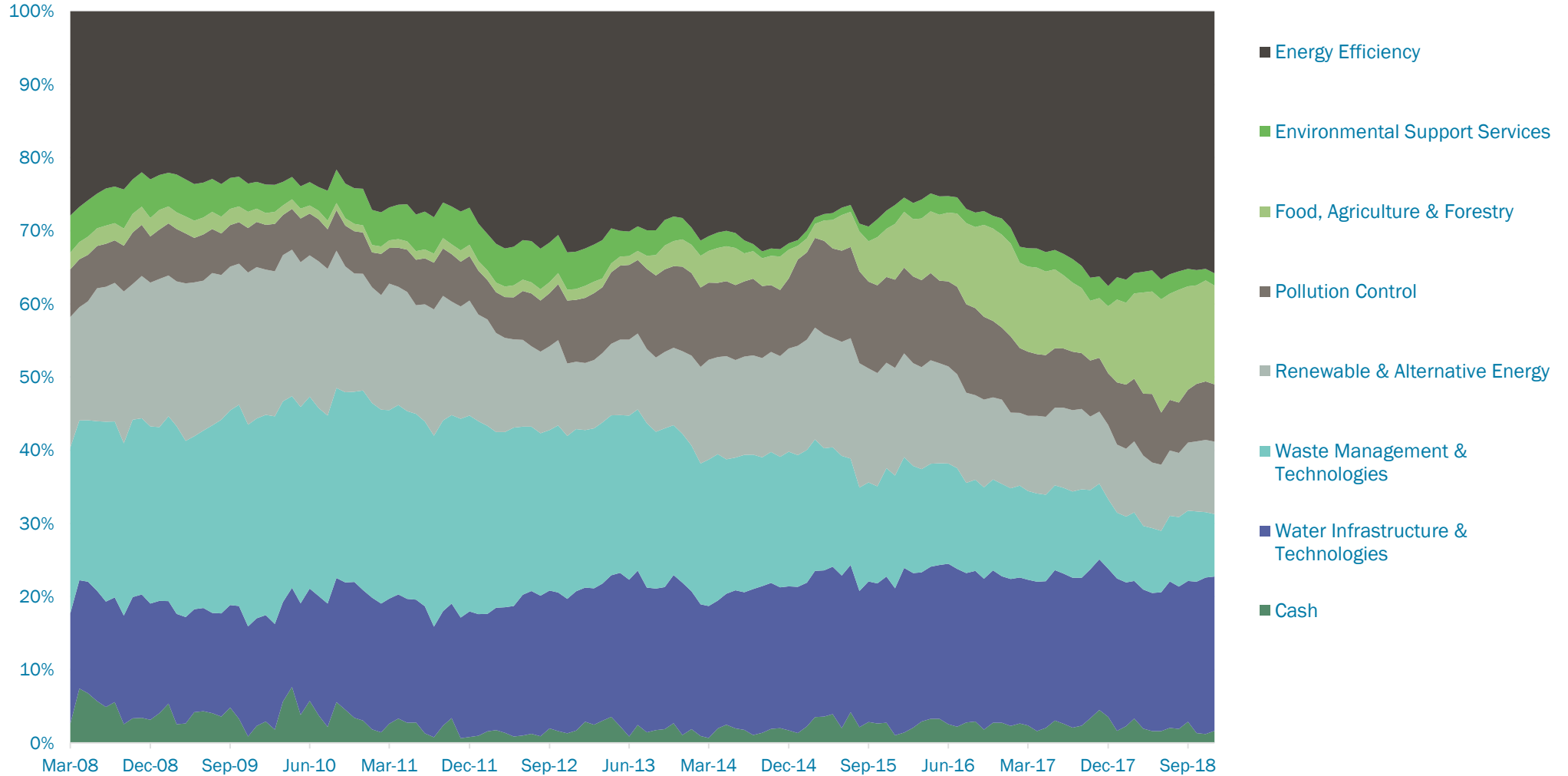
Updated for 2019 Q4. Market conditions reflect both external (e.g. cyclical) and internal (e.g. competition, technological disruption) factors. Valuation is by sub-sector individually, based on reversion to the mean and correlation to subsequent sub-sector performance, all measured quarterly over the last 10 years. ¹Change of earnings forecast relative to global equities over the last three months, as at 30 September 2019.

Roles for Environmental Markets in an investment portfolio



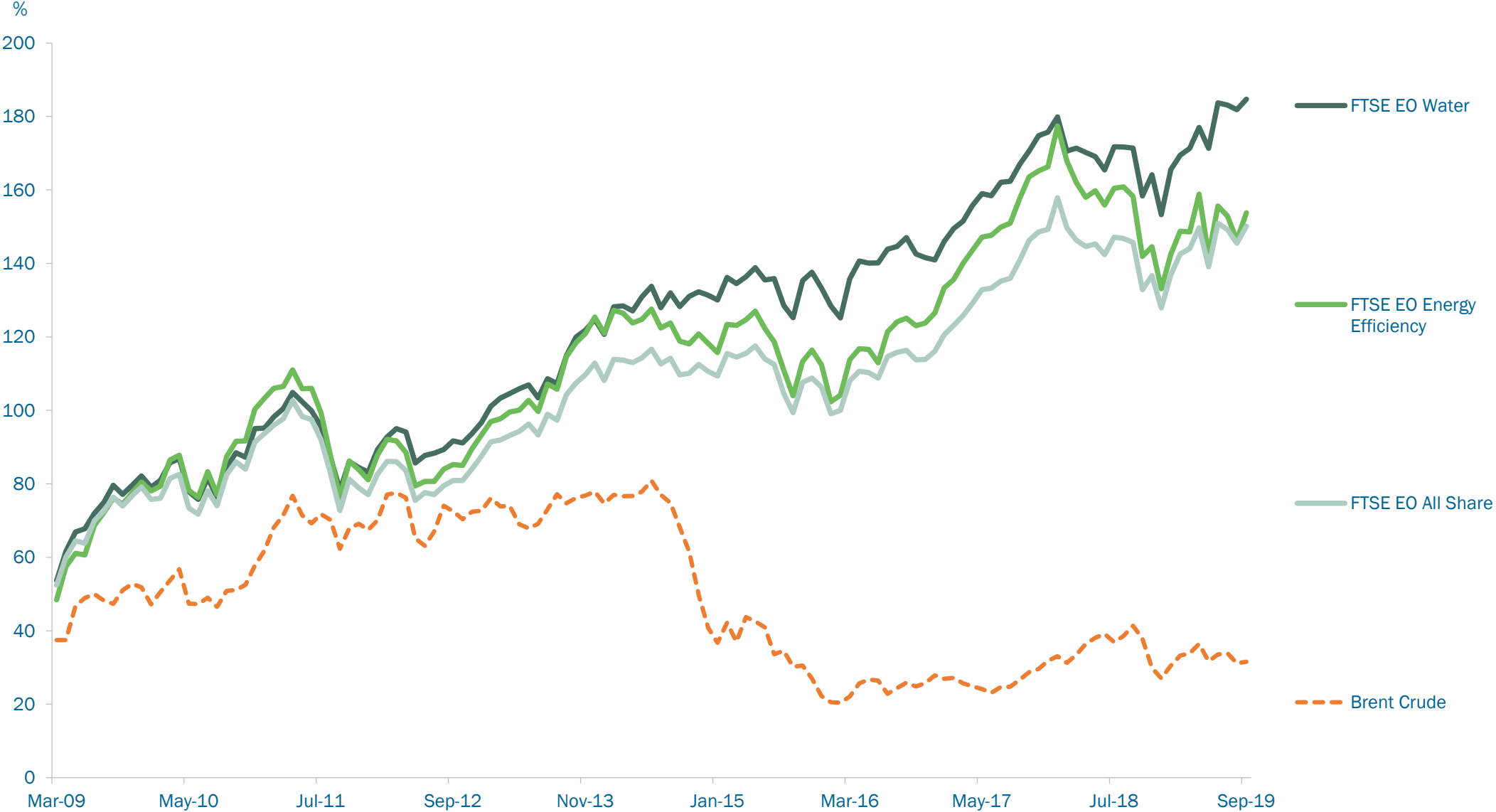
Active management between environmental opportunities

Impax Specialists strategy



Source: Factset. Data as at 28 December 2018, USD.

Environmental Markets decoupling from oil



These figures refer to the past. Past performance is not a reliable indicator of future results. The value of investments can fall as well as rise and you may get back less than you have invested. Data as at 30 September 2019, in USD. Source: FactSet, based on price returns. Bloomberg Global Coal Index. The FTSE Environmental Opportunities All Share Index launched on 28 April 2008 and data shown prior to this is back-tested.

Impax's proprietary 10-steps analysis

1 **Snapshot & Investment Thesis**
Role in the transition to a more sustainable economy

2 **Market**
Opportunity for growth

3 **Competitive advantage**
Technologies, brand, intellectual property, scale & distribution capabilities

4 **Business model & strategy**
Credibility of plans, consistency of returns

5 **Risks**
Industry dynamics, policy, macroeconomics and societal forces

6 **ESG**
Effective governance structures, management of material ESG risks

7 **Management**
Experience, effectiveness and succession

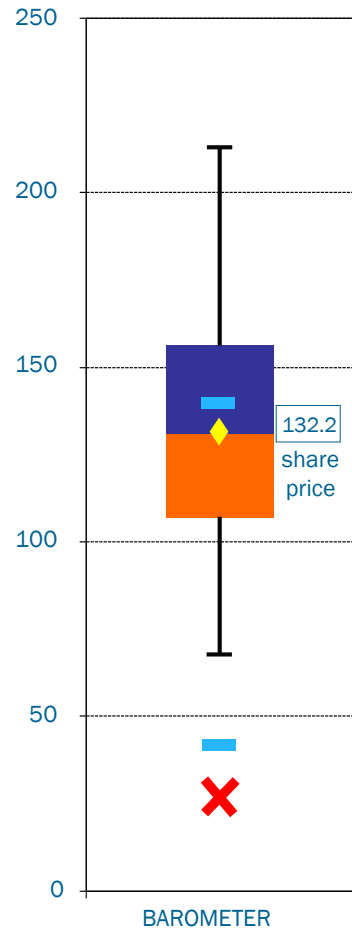
8 **Valuation scenarios**
Fair value assessment, best/worst cases

9 **Trading**
Liquidity, portfolio allocation

10 **Catalysts**
Route map to entry

Valuation framework - position risk management

Each investment opportunity has a 'worst case/best case' range constructed around an assessed 'intrinsic value' so that valuation is expressed as a range of outcomes, rather than a single point. This provides us with a framework for managing position size within our portfolios.



KEY VALUE DRIVERS are "flexed" within ranges [worst case, best case]

Flexible valuation platform (VIPER) to analyse intrinsic value

- following :
- Discounted cashflow model - 2-stage approach with a competitive advantage period and fade mechanism
 - Level of REVENUE
 - SUSTAINABLE GROWTH RATE
 - Multiples basis - absolute and relative to proprietary peer groups
 - EBITDA Margins
 - CAPEX Margins
 - Sum-of-the-parts approach
 - NET WORKING CAPITAL Margins

Scenario testing and Monte Carlo allows construction of 'worst case/best case' range

KEY POINTS ON THE CHART

- Revenue
 - 95% of the outcomes lie within the BLUE and ORANGE boxes
 - The boxes meet at the mid-cycle valuation on the DCF model
- Sustainable growth
- Profit margin
 - We ignore the outliers
- Capital requirements
- Net working capital margin
 - We recognise the 5 year high & low price, the current price and the current book value per share

LEGEND KEY

95% Monte Carlo output (Orange/Blue boxes) Worst/Best case (Vertical line) 5Y High/Low price (Horizontal line) Book value (P.S) (Red X) Current share price (Yellow diamond)

LEGEND KEY : 95% Monte Carlo Output (Orange/Blue boxes) Worst/Best Case (Vertical line) 5Y High/Low Price (Horizontal line) Book Value (P.S) (Red X) Current Share Price (Yellow diamond)

Source: VIPER Analytics. For illustrative purposes only.

Specialists case study 1

Textiles and fibre producer - Austria



WHAT

The company produces textiles and fibres from sustainable sources, with high levels of resource efficiency.

HOW MUCH

In 2018 it led to the avoidance of 13 million tonnes of CO₂ and it saved 4.9 megalitres of water by displacing cotton or man-made fibres.

CONTRIBUTION

Produces fibres from wood rather than cotton or chemical feedstocks, reducing energy and water use compared with conventional alternatives.

RISK

High water use is creating stress in areas of cotton production.

WHO BENEFITS

Its products help to reduce the supply chain impacts of its customers.

WHY

Land and water constraints are set to drive demand for the sustainable fibres produced by the company, which has recently undertaken a successful cost-cutting programme.

Specialists case study 2

Renewable energy developer - Portugal



WHAT

The company is one of the world's largest producers of wind energy.

HOW MUCH

Last year it generated 28.4 million MWh of clean power, avoiding 20 million tonnes of CO₂.

CONTRIBUTION

Develops, builds and operates wind farms, selling the power to local utilities and businesses.

RISK

Without this company's projects, global greenhouse gas emissions would be higher.

WHO BENEFITS

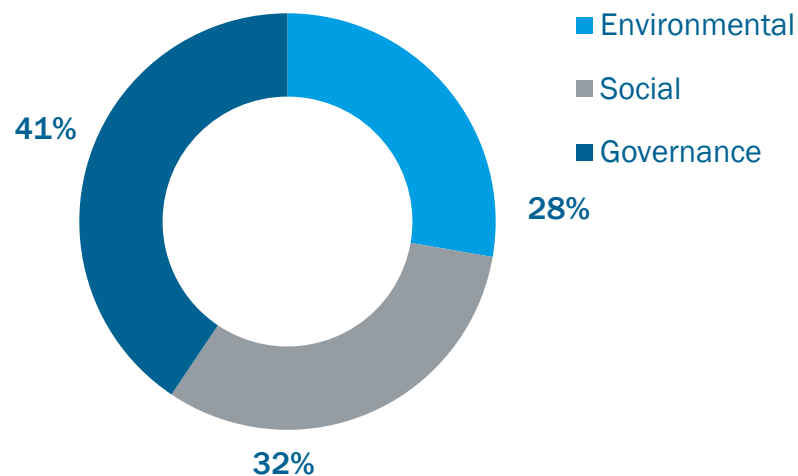
Its projects in 14 jurisdictions around the world produce electricity without local air pollution or greenhouse gas emissions.

WHY

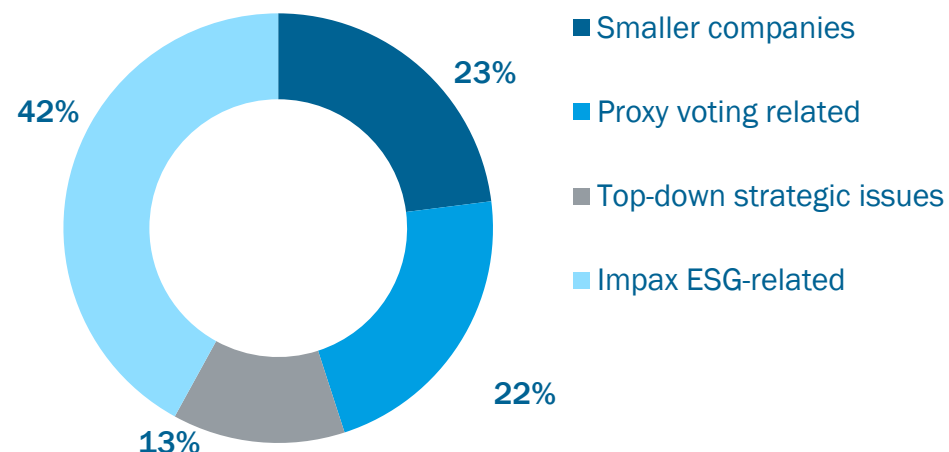
A market leader with an excellent operating history, the company has shown an ongoing ability to reduce costs, and has an effective asset rotation strategy to take advantage of demand for operating assets.

2018 Engagement and proxy voting activity

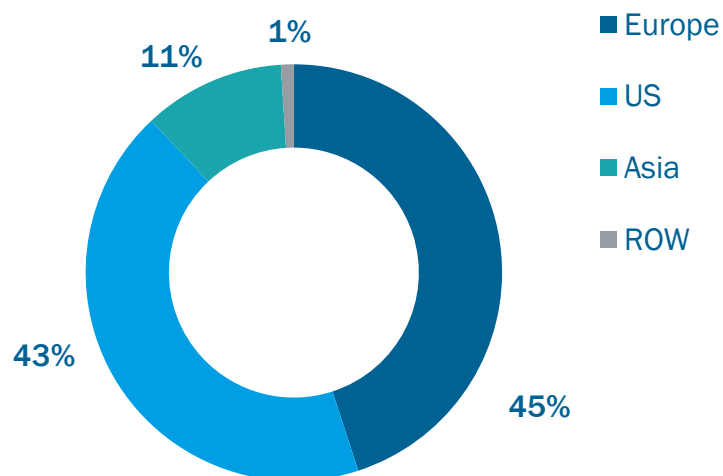
ENGAGEMENT FOCUS



ENGAGEMENT TOPIC



ENGAGEMENT REGION



PROXY VOTING STATISTICS

Total number of meetings where it was possible to vote	196
Number of meetings in which IAM ¹ voted	189
Number of meetings in which IAM ¹ voted (%)	96.4
Number of resolutions in which IAM ¹ voted	2,288
Number of resolutions in which IAM ¹ voted against or abstained	171
Number of resolutions in which IAM ¹ voted against or abstained (%)	7.5

¹IAM refers to Impax Asset Management Ltd.

Investment solutions across asset classes

Impax Asset Management Group plc

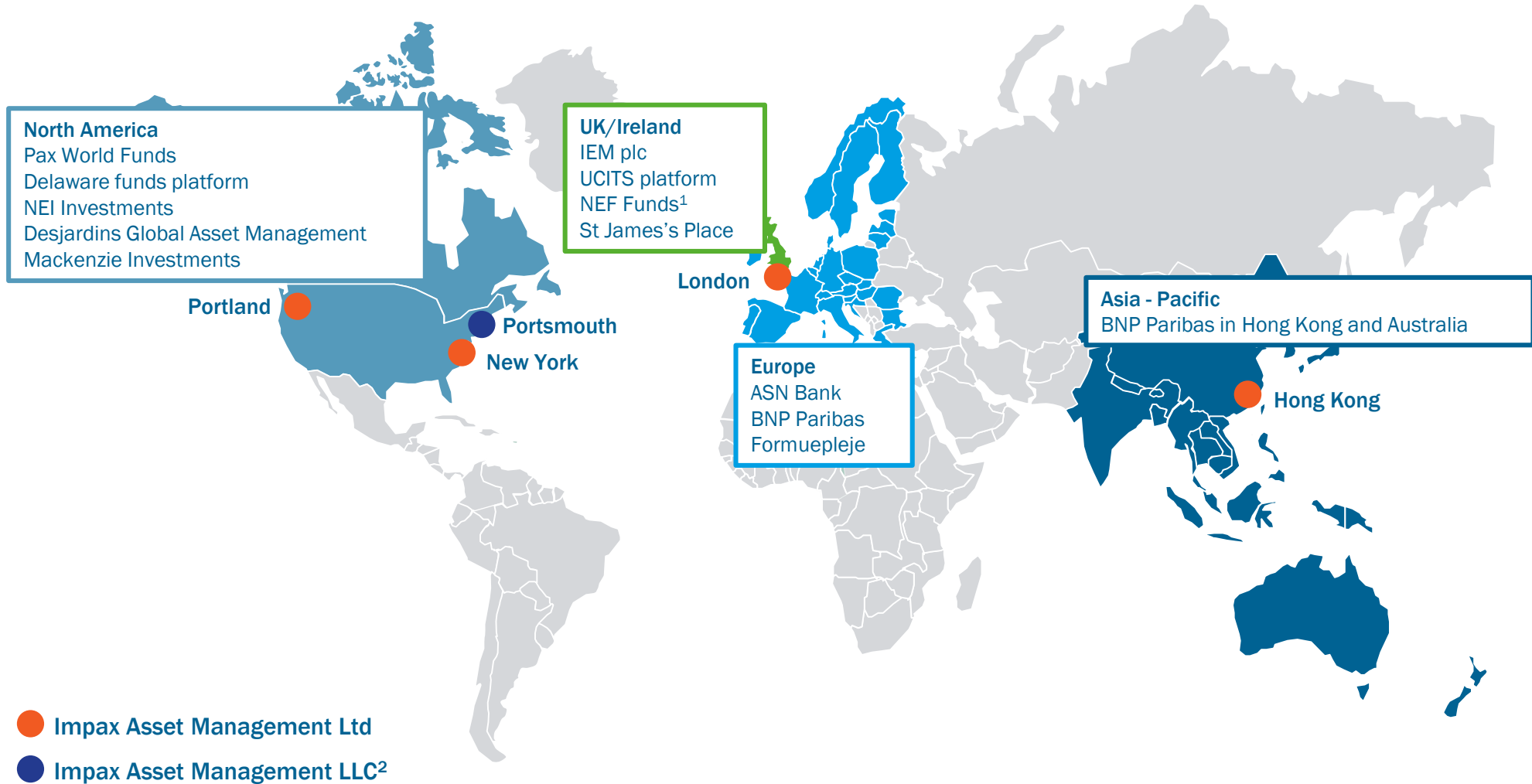
London managed (Impax Ltd)

Asset class	Strategy	Inception date
Thematic Equities	Specialists	2002
	Leaders	2008
	Water	2009
	Sustainable Food	2012
	Asia-Pacific	2009
Unconstrained Equities	Global Opportunities	2015
Real Assets	NEF	2005
	Property	2014

US managed (Impax LLC)

Asset class	Strategy	Inception date
US Equities	Small Cap	2008
	Large Cap	2016
Smart Beta	ESG Beta Quality	1997
	ESG Beta Dividend	2016
	Global Women's	2006
	MSCI EAFE ESG	2011
Fixed Income	Core Bond	2016
	High Yield Bond	1998

Our offices and distribution partners



¹Impax New Energy Investors Funds. ²Previously Pax World Management LLC.

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Specialists: annual disclosure presentation – September 2019 USD

Year	Total Firm		Number of Portfolios ¹	Annual Gross Return	Annual Net Return	MSCI AC World Return	FTSE ET Return	Asset Weighted StdDev*	3yr Annualized Std Dev**	MSCI AC World 3yr Annualized Std Dev**	FTSE ET 3yr Annualized Std Dev**
	Assets (Millions)	Ending Market Value (Millions)									
2019 YTD	17,444.92	1,785.03	8	20.90	19.91	16.20	14.43	1.12	13.25	11.16	14.19
2018	13,453.22	1,322.03	8	-14.62	-15.55	-9.41	-15.17	1.17	12.79	10.48	13.11
2017	9,977.17	2,115.70	9	26.92	25.54	23.97	31.56	0.95	11.62	10.36	13.22
2016	5,456.11	1,398.70	9	14.71	13.46	7.86	2.19	0.91	13.33	11.06	15.04
2015	3,879.17	1,098.62	7	0.54	-0.55	-2.36	-0.77	0.47	12.34	10.79	14.25
2014	3,522.26	1,101.22	6	-3.70	-4.71	4.16	-1.96	0.28	13.11	10.50	13.67
2013	3,231.36	1,201.97	6	36.14	34.82	22.80	44.58	1.56	16.20	13.94	18.48
2012	2,349.66	1,015.88	6	13.45	12.33	16.13	5.82	0.79	19.55	17.13	22.67
2011	2,224.45	1,071.13	6	-18.14	-18.96	-7.35	-27.92	0.61	23.91	20.59	27.65
2010	2,913.42	1,571.81	6	9.40	8.21	12.67	-5.20	--	30.07	24.49	36.33
2009	2,162.13	1,351.74	5	45.54	43.99	34.63	29.34	--	28.13	22.34	35.13
2008	1,199.84	918.74	4	-42.42	-43.03	-42.19	-54.54	--	25.72	17.97	33.89
2007	1,854.19	1,564.87	3	19.53	18.36	11.66	72.27	--	15.70	8.65	18.64
2006	760.61	612.82	3	39.97	38.62	20.95	36.47	--	15.92	8.12	18.02
2005	272.91	230.62	2	10.05	8.91	10.84	11.32	--	16.67	9.89	15.55
2004	116.71	73.29	1	26.53	25.30	15.23	13.79	--	--	--	--
2003	66.21	59.11	1	37.22	35.89	33.99	32.93	--	--	--	--
2002	48.90	43.86	1	-35.86	-36.42	-16.39	-35.22	--	--	--	--

Results shown for the year 2019 represent a partial performance from January 1, 2019 through September 30, 2019.

Results shown for the year 2002 represent partial period performance from March 1, 2002 through December 31, 2002.

*The asset weighted standard deviation is not shown when there were less than six accounts in the composite for the entire year.

** The 3 years ex-post standard deviation is not shown for the composite and benchmarks if 36 rolling monthly returns are not available.

¹ The number of accounts in the Specialists GIPS Composite decreased from 9 to 8 in January 2018 following the exclusion of a fund from the composite due to a change to its trading model.

FTSE ET performance is a combination of FTSE ET100 and FTSE ET50 indices. FTSE ET100 data launched on January 2014, previous data represents FTSE ET50. FTSE ET50 launched January 2008, data has been back tested by FTSE.

The Specialists Global Composite contains long only accounts which invest in companies where a majority of the business activities are in the provision of services, infrastructure and technology in environmental markets, particularly those of alternative energy and energy efficiency, water treatment and pollution control, and waste technology and resource management and sustainable food, agriculture and forestry. For comparison purposes, the composite is measured against the MSCI All Country World Index and FTSE ET indices. FTSE ET performance is a combination of FTSE ET100 and FTSE ET50 indices. FTSE ET100 data launched on January 2014, previous data represents FTSE ET50. FTSE ET50 launched January 2008, data has been back tested by FTSE.

Impax Asset Management claims compliance with Global Investment Performance Standards (GIPS®) and have prepared and presented this report in compliance with the GIPS standards. Impax Asset Management Limited and Impax Asset Management (AIFM) Limited have been independently verified for the periods March 1, 2002 through to December 31, 2018. A copy of the verification reports are available upon request.

Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. Verification does not ensure the accuracy of any specific composite presentation.

Impax Asset Management is defined as Impax Asset Management Limited, Impax Asset Management (AIFM) Limited and Impax Asset Management LLC. These entities are subsidiaries of Impax Asset Management Group plc ("IAM") which is a publicly traded investment management company registered in the United Kingdom, and is headquartered in London, UK. For GIPS purposes the firm includes discretionary and non-discretionary accounts but excludes accounts which have a mandate to invest entirely in private equity or property. Prior to January 2018, Impax Asset Management only included Impax Asset Management Limited and Impax Asset Management (AIFM). The firm was redefined to also include Impax Asset Management LLC to reflect the acquisition of Pax World Management LLC. The firm maintains a complete list and description of composites, which are available upon request.

The MSCI All Country World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. It covers 23 developed and 23 emerging market country indexes. The FTSE ET index is a combination of FTSE ET100 and FTSE ET50 indices; these two indices are part of the FTSE Environmental Technologies Index Series which comprise the 50 and 100 largest pure play environmental technology companies globally, by full market capitalisation. The indices are designed to measure the performance of companies that have a core business in the development and operation of environmental technologies. FTSE ET100 data launched on January 2014, previous data represents

FTSE ET50. FTSE ET50 launched January 2008, data has been back tested by FTSE. FTSE ET Index has been added starting from March 2015 to match the official marketing material and because it better reflects the composite strategy. All indices are displayed in USD.

Results are based on fully discretionary accounts under management, including those accounts no longer with the firm. Composite performance is presented net of foreign withholding taxes on dividends, interest income, and capital gains. Withholding taxes may vary according to the investor's domicile. MSCI All Country World is presented net of foreign withholding taxes on dividends, interest income and capital gains while FTSE ET Indices performance is presented gross of foreign withholding taxes on dividends, interest income and capital gains. Past performance is not indicative of future results.

The U.S. Dollar is the currency used to express performance. Returns are presented gross and net of management fees and include the reinvestment of all income. Net of fee performance was calculated using the highest fee of 1.1%. The annual composite dispersion presented is an asset-weighted standard deviation calculated for the accounts in the composite the entire year. Policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

Since June 2014 the highest annual management fee for the composite is 1.1%, previously the highest was 1.0% from January 2012 to May 2014. Previously the highest fee was 0.9863% from January 2011 to December 2011, 1.1% from January 2009 to December 2010, 1% from January 2006 to December 2008, 1.05% from January 2005 to December 2005 and prior to that the highest was 1%. Actual investment advisory fees incurred by portfolios may vary.

From January 2002 to October 2018 the gross returns for the separate accounts were calculated using the fee applicable to Impax Asset Management, whilst since November 2018 the fee used to gross up the returns is the actual total expense. From January 2002 to October 2018 the highest fee used to calculate the net of fee performance returns was only applicable to Impax Asset Management, whilst since November 2018 the highest fee used for the computation is the total management fee which is expected to be paid by the relevant account.

Trading may occur in local currency, but it is converted to base currency based on Bloomberg exchange rates as of 6pm Greenwich Mean Time each day, therefore performance is affected by currency translation. Since October 2010 base currency is converted using WM Reuters exchange rates as of 4pm Greenwich Mean Time.

The Specialists Global Composite was created March 31, 2015.

MSCI AC World Index performance presented is net of withholding taxes while FTSE ET performance is gross of withholding taxes given the unavailability of net of withholding taxes returns by FTSE.

It is not part of the IAM investment philosophy to invest in leverage or derivatives. However the IEM account can borrow up to 20% of its assets for investment purposes

Important information

This document has been approved by Impax Asset Management Limited and Impax Asset Management (AIFM) Limited (“Impax”, authorised and regulated by the Financial Conduct Authority). Both companies are wholly owned subsidiaries of Impax Asset Management Group plc.

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