FTSE4Good
15-year anniversary report: Past, present and future of sustainable investment

FTSE
Russell

About FTSE Russell

FTSE Russell is a leading global index provider with the scale, depth and reach to meet client needs across asset classes, style and strategies. FTSE Russell's indexes offer a true picture of the world, combining global perspective with the knowledge gained developing local benchmarks for markets around the world.

FTSE Russell index expertise and products are used extensively by institutional and retail investors globally. Approximately $10 trillion is currently benchmarked to FTSE Russell indexes. For over 30 years, leading asset owners, asset managers, ETF providers and investment banks have chosen FTSE Russell indexes to benchmark their investment performance and create investment funds, ETFs, structured products and index-based derivatives. FTSE Russell indexes also provide clients with tools for asset allocation, investment strategy analysis and risk management.

Contents

SECTION 1

The new normal

Sustainable investment models — from niche to core

When the FTSE4Good Index Series launched in 2001 it was regarded by many as a fad, and one of the UK's mainstream newspapers even called it the "silly index." Environmental and social issues were regarded as niche "ethical" concepts that were irrelevant, distracting, or even return-compromising by almost all investment professionals. Fifteen years later the landscape has changed beyond recognition, with financial institutions around the world—including pension funds, insurance companies, asset managers and banks—now incorporating sustainable investment approaches into their investment philosophy and processes.

For many years there was a growth in commitments and policies, but little change in investment practices and actual asset allocation.

The trend toward sustainable investment approaches was first seen through the growth in the number of institutions and geographies making commitments and joining initiatives, such as the UN-backed Principles for Responsible Investment (PRI). However, the step change, which has been evident in the last two or three years, has been in the actions being taken: re-allocating assets and using sustainability parameters in an integrated manner deep within the investment process.

FTSE4Good

LAUNCH

2001

Niche ethical retail funds

Few institutional investors

5 YEARS

2006

FTSE helps develop the UN PRI & becomes a founding signatory

ESG term is coined

Growing institutional awareness

The global rise of ESG & low-carbon investing

Over **1,500 signatories** with over **US$60 trillion** under management have signed the United Nations backed Principles for Responsible Investment (PRI), a doubling of the assets pledged to PRI since 2011.

Under the 2014 Montreal Pledge, **118 investors** with over **US$10 trillion** in assets have committed to annually disclose the carbon footprint of their investment portfolios, and **612 global institutions** have signed fossil fuel divestment commitments, covering **US$3.4 trillion** of assets.

Source https://www.unpri.org/about

1500
Signatures

$60T
Under management

FTSE4GOOD.
10 years of impact & investment.
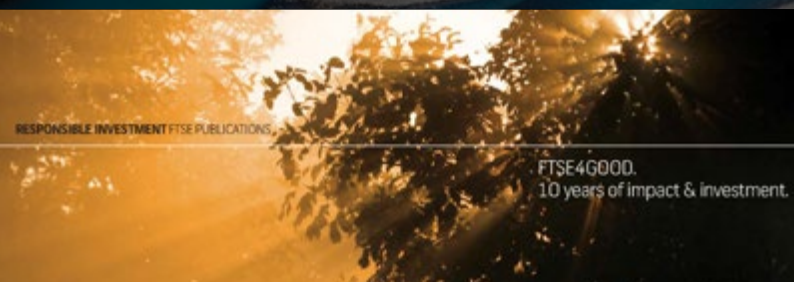
FTSE4Good
15-year anniversary

10 YEARS

2011

Growing numbers of European institutional investors aiming to integrate ESG

Most focus still on active equity

15 YEARS

2016

Growing adoption of ESG integration globally, also into benchmarks, as well as across asset classes including debt, private equity and real estate

A common goal among financial institutions such as pension funds, insurance companies, asset managers and banks is to achieve better risk-adjusted investment results by incorporating sustainability parameters into overall portfolio construction and

In this report, published to commemorate the fifteenth anniversary of the FTSE4Good Index Series, we explore some of the key issues facing asset owners and asset managers: stewardship and environmental, social and governance (ESG) integration, sustainable investment

> A common goal among financial institutions . . . is to achieve better risk adjusted investment results by incorporating sustainability parameters into overall portfolio construction and asset allocation processes. It is therefore neither a matter of box-ticking nor a public relations exercise. . .

asset allocation processes. It is therefore neither a matter of box-ticking nor a public relations exercise, as some have regarded this area in the past. Instead, it's a source of additional data and information that enables a better analysis and understanding of a company's future prospects—both a way of recognizing a fundamental shift in the global economy and of fulfilling a fiduciary duty to portfolio owners and beneficiaries.

models, the state of global ESG disclosure, and measuring and mapping ESG performance. The last two sections of this report on disclosure and performance will focus on quantitative information and how this data can be used.

As sustainability moves to become the new normal with professional investors, we hope the report will inform readers about the information available to help them analyze investment opportunities and risks associated with ESG integration, carbon exposure, and the ongoing industrial transition to a green economy.

Sustainable investment models: definitions

Many asset owner and asset manager institutions struggle with considering the various approaches to sustainable investment and data. FTSE Russell has narrowed down the list of questions to consider into actionable, digestible elements supported by fundamental data models.

Sustainable investment approaches can focus on three key questions:

1

How do companies operate?

This question is answered through the use of Environmental, Social and Governance (ESG) data.

2

Do companies pollute?

This question is answered through the use of greenhouse gas emissions output and hydrocarbon reserves data.

3

What do companies manufacture?

This question is answered through the use of green revenues data.
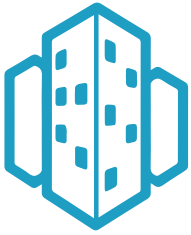
How do companies operate?

To what extent does the company take a proactive approach to long term business risks from environmental, social, and governance risks to its business operations?

ESG

Do companies pollute?

Does the company own hydrocarbon assets or emit pollutants linked to the greenhouse gas effect that, through their release into the environment, represent a risk to the future stability of global climate and eco systems?

CO_2e

What do companies manufacture?

Does the company provide goods, products or services that, through their utility enable society to adapt to, mitigate or remediate the impact of climate change, resource depletion or environmental erosion?

LCE

SECTION 2

Sustainable investment data

Meeting a growing need

The first PRI principle is a commitment to incorporate ESG issues into investment analysis and decision-making processes. For this to occur, investors rely upon comprehensive and consistent data sets and analytics.

Currently, information about sustainability comes from multiple sources, including companies' mandatory accounting disclosures, regulatory filings, stock exchanges, suppliers and the public domain. Despite recent initiatives from many financial market regulators and stock exchanges to make sustainability disclosure mandatory, a majority of companies around the world still do not communicate externally about their performances and practices in most of these areas.[1] Where companies do report the information, each company will often publish the information in different locations, and in different formats, which can make it difficult to compare. Data providers like FTSE Russell therefore play a vital role in collecting, checking and reporting sustainability data from companies around the world, and in presenting this data in a consistent, easy-to-use analytical format.

Six UN Principles for Responsible Investment

We will incorporate ESG issues into investment analysis and decision-making processes	We will promote acceptance and implementation of the Principles within the investment industry
We will be active owners and incorporate ESG issues into our ownership policies and practices	We will work together to enhance our effectiveness in implementing the Principles
We will seek appropriate disclosure on ESG issues by the entities in which we invest	We will each report on our activities and progress towards implementing the Principles

[1] See Section 4 for more detail on disclosure rates based on FTSE Russell research.

ESG data model: Measuring operational practices & performance

FTSE Russell's ESG data model is based on an assessment of publicly available company-level data, covering over 300 indicators of operational performance. The output is ESG Ratings that cover a substantial company universe: all the companies in the FTSE All-World Index and the Russell 1000 ® Index, plus additional small cap stocks for certain countries (Japan, UK, Malaysia and South Africa).

The model consists of data at four hierarchical levels for each company in the research universe. Individual companies are scored on a ranking from 0 (no disclosure) to 5 (best practice) in each of 14 ESG Themes. They also receive an Exposure ranking between 0 (negligible) and 3 (high) in each Theme. It is important that companies that are more exposed to particular Themes are doing more to address them. Therefore, companies with higher exposure are assessed using higher thresholds than companies with lower exposure. Cumulative scores and Exposures are given for each of the ESG Pillars (environmental, social and governance) and each company is awarded an overall ESG Rating, measuring its total performance across fourteen themes.

FTSE Russell's evaluation criteria draw from pre-existing global standards and aim to support the drive towards standard harmonization globally. It draws from over 40 leading global frameworks, including by way of illustration such standards as the GRI (Global Repotting Initiative), CDP (formerly known as the Carbon Disclosure Project), the OECD Guidelines, the GHG Protocol, and Transparency International's Business Principles for Countering Bribery.

ESG Rating

3 ESG Pillars
Score & Exposure

14 ESG Themes
Score & Exposure

> 300
Indicators

...a majority of companies around the world still do not communicate externally about their performances and practices in most of these areas.
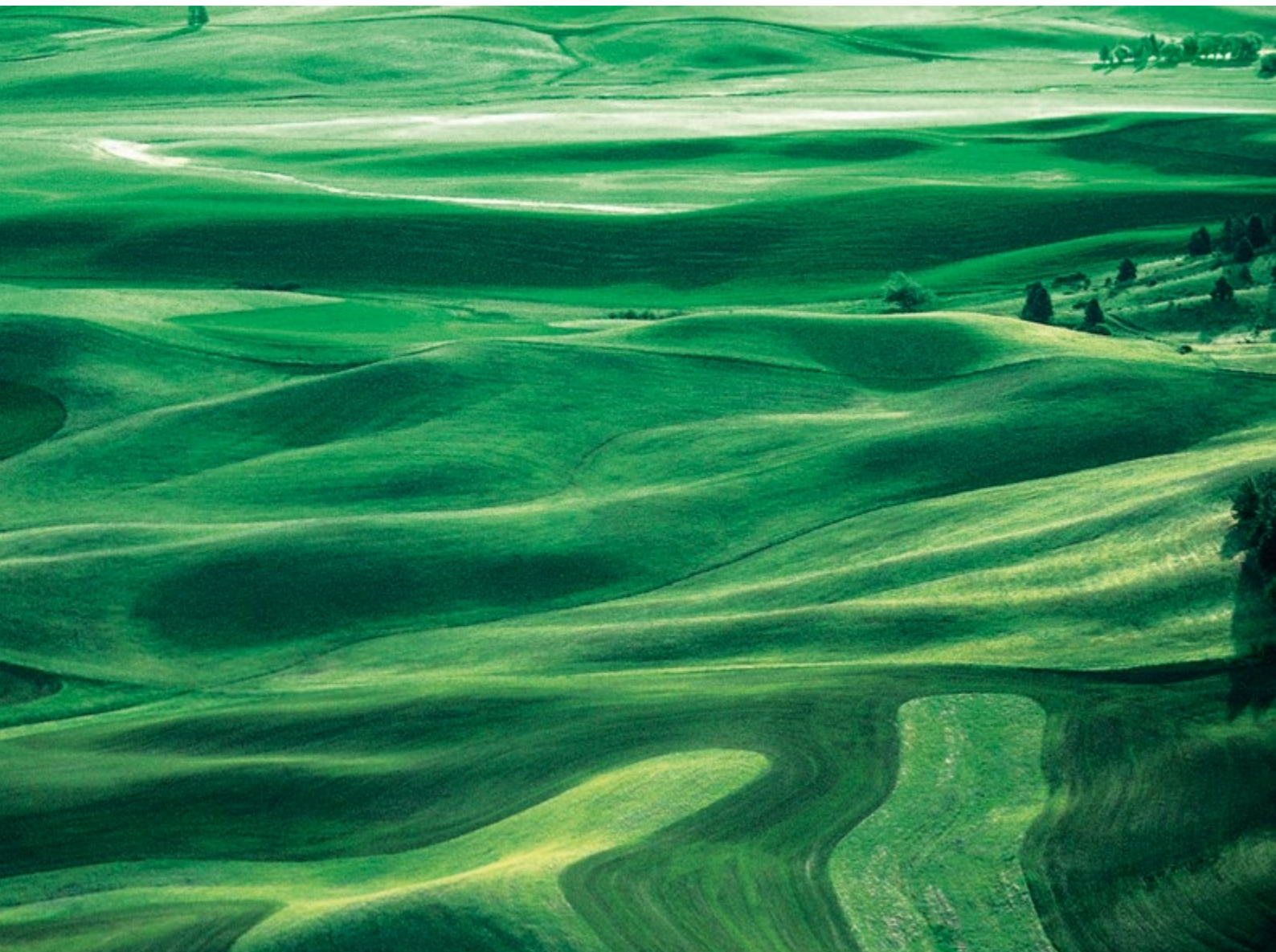
Materiality: Exposure relative scoring at pillar and overall rating

When calculating the Pillar scores it is not a simple mean average of all the Theme scores; it is instead calculated as a weighted average Exposure level. The score of each Theme is weighted by its Exposure level; Low Exposure has a weight of 1, Medium Exposure a weight of 2, and High Exposure a weight of 3. This principle is also applied to calculate the overall ESG Rating where the weight for each Pillar is based on the average exposure to the applicable Themes within it.

Industry relative ESG Ratings and Scores

In addition to the "absolute" scores and ratings described above, peer relative scores and ESG Ratings are also provided. These are calculated by comparing a company's score or ESG Rating to others within the same Industry Classification Benchmark (ICB) Supersector. At the overall ESG Rating level it is represented as a percentile where a "1" indicates that a company is in the bottom 1% and "100" indicates a company is in the top 1%.

The ESG Ratings use a company's Theme exposure and score to calculate a range of assessments that allow investors to understand a company's ESG practices in multiple dimensions.

ESG ratings model

Tax Transparency
Risk Management
Corporate Governance
Anti-Corruption

Biodiversity
Climate Change
Pollution & Resources
Water Use

Supply Chain: Environmental

Labor Standards
Human Rights & Community
Health & Safety
Customer Responsibility

Supply Chain: Environmental

Governance

Environmental

Social

ESG Rating

Theme Indicators → Theme Score → Pillar Score → ESG Rating

Theme Exposure → Pillar Exposure

Score		Exposure	
0	No disclosure	**3**	High
1		**2**	Medium
2		**1**	Low
3	Good practice	**0**	Negligible
4			
5	Best practice		

>300 Indicators

Individually researched aspects which focus on key operational issues

14 Themes

A score and Exposure for the issues in each ESP Pillar, such as Climate Change/Anti-Corruption

3 Pillars

A cumulative score and Exposure for each Environment/Social/Governance

1 ESG Rating

A cumulative calculation of total ESG performance

LCE data model: Measuring green revenues and the shift to a green economy

FTSE Russell's Green Revenues (LCE) data model is based on a radical modification of traditional frameworks of industrial classification. Under traditional frameworks, such as the Industry Classification Benchmark (ICB), each company is allocated to the subsector that most closely represents the nature of its business. This is determined by its primary source of revenue and other publicly available information.

One-to-one classification systems like the ICB have the benefit of simplicity. However, they cannot provide information about activities falling outside the core area of business. This construct is exposed through periods of industrial transition such as the rapidly developing low carbon or green economy.

The LCE classification system is a one-to-many model. It classifies companies across 60 sub-sectors within eight sectors designed to capture production within a new green industrial framework:

- energy generation
- energy equipment
- energy management
- energy efficiency
- environmental infrastructure
- environmental resources
- modal shift
- operating shift

These are designed to capture the delivery of goods, products and services related to the industrial transition within a new green industrial classification framework.

For example, under the ICB framework US conglomerate General Electric (GE) is allocated to the "general industrials" sector to represent its core activity, even though the company has historically had significant investments in the finance, healthcare and media businesses.

Under the LCE framework, General Electric is mapped to 17 sub-sectors, providing an accurate and easily interpretable record of its activities in a number of "green" industries.

The LCE data model, which includes detailed corporate financial history from 2008 onwards, covers over 13,400 companies, of which more than 2,600 have green revenues from one or more of the 60 green industrial sub-sectors. The research universe represents nearly 99% of the world's total market capitalization. The model is based on line-entry level revenue data from constituent companies, collected and collated by FTSE Russell analysts according to a rules-based and transparent process.

> The LCE classification system is a one-to-many model. It classifies companies across 60 sub-sectors within eight sectors designed to capture production within a new green industrial framework.

Mapping General Electric to green revenues Sub-Sectors

	LCEG - Energy Generation	LCEQ - Energy Equipment	LCEM - Energy Management	LCEE Energy Efficiency
01	LCE Bio Fuels	LCE Bio Fuels	LCE Combined Heat/Power	LCE Advanced Materials
02	LCE Clean Fossil Fuels	LCE Clean Fossil Fuels	LCE Controls	LCE Buildings and Property
03	LCE Geothermal	LCE Geothermal	LCE Fuel Cells	LCE Industrial Processes
04	LCE Hydro	LCE Hydro	LCE Integrated LCEM	LCE Integrated LCEE
05	LCE Integrated LCEG	LCE Integrated LCEQ	LCE Logistics and Support	LCE IT Processes
06	LCE Nuclear	LCE Nuclear	LCE Power Storage	LCE Lighting
07	LCE Ocean and Tidal	LCE Ocean and Tidal	LCE Smart Grids	LCE Video Conferencing
08	LCE Solar	LCE Solar		
09	LCE Waste to Energy	LCE Waste to Energy		
10	LCE Wind	LCE Wind		

	LCEI - Environmental Infrastructure	LCER - Environmental Resources	LCMS - Modal Shift	LCOS - Operating Shift
01	LCE Carbon Capture & Storage	LCE Agriculture	LCE Aviation	LCE Finance/Investment
02	LCE Desalination	LCE Aquaculture	LCE Integrated LCMS	LCE Integrated LCOS
03	LCE Flood Control & Land Erosion	LCEIntegrated LCER	LCE Railways	LCE Retail/Wholesale
04	LCE Integrated LCEI	LCE Mining	LCE Road Vehicles	LCE Property
05	LCE Logistics & Support	LCE Minerals and metals	LCE Shipping	
06	LCE Pollution Management	LCE Source Water		
07	LCE Recyclable Products	LCE Sustained Forestry		
08	LCE Recycling Services			
09	LCE Waste Management			
10	LCE Water Management			

The LCE data model, which includes detailed corporate financial history from 2008 onwards, covers over 13,400 companies, of which more than 2,600 have green revenues from one or more of the 60 green industrial sub-sectors.

Incorporating sustainable investment into investment strategies

Mapping out the approaches

A variety of methods exists to integrate ESG, carbon and green revenues considerations into indexes and investment portfolios. These include:

- **Engagement and stewardship:** identifying and engaging with companies where there are specific concerns, such as when a company is highly exposed to ESG risks but doing very little to manage those risks.

- **Exclusion-based approaches:** the removal from indexes or portfolios of certain companies due to their particular characteristics, exposure, practices or behaviors.

- **Inclusion-based approaches:** the inclusion of certain companies in indexes or portfolios due to their particular characteristics, exposure, practices or behaviors.

- **Integration:** where certain sustainable investment parameters are weighed up alongside other more traditional forms of investment data and information to inform decision making. This is frequently applied for actively managed portfolios but is now increasingly used within the rules for indexes, which allows "integrated" or "smart sustainability" approaches. (See next section for more details.)

These approaches are not mutually exclusive, and indexes and portfolios may combine exclusion and inclusion processes simultaneously, with or without the use or reference of other data.

The FTSE4Good Index Series uses both exclusion-based and inclusion-based methodologies; companies manufacturing tobacco, weapons systems and controversial weapons components are excluded, while only companies with FTSE ESG Ratings above a given threshold are included.

Another example would be the FTSE Russell Divest-Invest Developed 200 Index, which is designed to remove carbon assets while over-weighting green revenues exposure.

The rise of factor investing and alternatively-weighted "Smart Beta" indexes

In parallel with the rise of sustainable investment approaches, the last 15 years have also witnessed a major shift in investors' uses of indexes. Worldwide, a majority of asset owners are now considering or making use of so-called "smart beta" indexes, which depart from the traditional methodology of weighting index constituents by their market size (capitalization)[2].

Traditional, capitalization-weighted indexes are still the dominant form of an index. However, smart beta indexes are increasingly used either as a way of modifying the risk characteristics of standard indexes, or as a way of giving transparent and rules-based exposure within the index to risk factors, such as value, size, low volatility, momentum and quality. Decades of empirical research into these risk factors have helped establish their individual risk/return characteristics.

FTSE Russell designs factor indexes with two objectives in mind: to achieve consistent and meaningful index exposure to the targeted factor; and to take into consideration the real-life constraints faced by investors, such as index capacity, liquidity, diversification and turnover.

Many asset owners are now interested in incorporating ESG parameters into their factor models.

[2] According to the 2016 FTSE Russell Smart Beta Survey, 72% of asset owners worldwide are using or actively evaluating smart beta

The advent of "Smart Sustainability" indexes

It is possible to bring together both factor index approaches and sustainability parameters into a single index design. This can reflect a range of investment beliefs around traditional factors and sustainability together. This type of approach has the potential to play a vital role

in helping asset owners and asset managers integrate Sustainable Investment into their portfolios.

To see how this works, consider the design of the new FTSE All-World exCW Climate Balanced Factor Indexes. In the design of such indexes, FTSE Russell combines a wide range of Sustainable Investment data into a single Smart Sustainability index solution.

FTSE All-World ex CW Climate Balanced Factor Indexes Design

1. Exclusions of companies making certain weapons that are banned under international treaties

2. Application of factor tilts based on four factors; volatility, quality, value and size

3. Reduction in exposure to companies with more carbon intense fossil fuel reserves

4. Reduction in exposure to companies with higher carbon emissions: through tilting the weights of companies within a sector based on their relative operational carbon emissions

5. Increasing exposure to green revenues: tilting based on green revenue exposure levels

Smart Beta meets Smart Sustainability: ESG integration into passive investing

This "Smart Sustainability" index launched in November 2016 has been chosen by Legal & General Investment Management (LGIM) for its new Future World Fund, which HSBC Bank UK Pension Scheme has selected for its equity default option, worth £1.85 billion, in its DC scheme.

The index combines a smart beta factor approach alongside climate change considerations. The innovative index methodology tilts constituent weights to provide increased but balanced exposures to value, quality, low volatility and size factors. It then incorporates climate change considerations through three parameters; carbon efficiency, fossil fuel reserves and the green revenues of constituents, of eligible securities from the FTSE All-World Index, excluding companies involved in manufacturing weapons banned under international treaties such as cluster munitions and land mines.

Index methodology overview

Starting Universe: FTSE All-World – Over 3,000 securities from Developed and Emerging Markets

1 Exclude companies that produce "controversial" weapons: cluster munitions, anti-personnel mines, chemical or biological weapons

2 For each company we then calculate its exposure to the four factors (volatility, quality, value and size) and tilt the index towards those securities with the highest factor exposures

3 Decrease the weight of constituents based on their exposure to fossil fuels or carbon emissions and increase the weight of constituents with green revenues

Decrease

Decrease

Increase

4 Apply standard stock capacity, industry and country constraints

5 Publish index, regular reviews

The index is reviewed twice a year in order to update for newly eligible stocks, changes in exposure to factors, fossil fuels, carbon emissions and green revenues.

FTSE Russell's pioneering role in ESG

A systemic approach to sustainability

Fifteen years ago, in 2001, the idea of benchmarking sustainable investment performance via an ESG index was relatively new. At that time, the market for sustainable investment products was dominated by ethical or socially responsible funds, primarily targeted at retail investors.

There was also relatively little understanding among asset owners and asset managers of how environmental, social and governance issues could constitute important sources of risk and return.

The introduction of the FTSE4Good Index Series therefore helped meet a growing demand among investment institutions for a more systematic approach to sustainability.

One of the key drivers for the creation of the index series was a 1999 revision to the UK Pensions Act, under which

pension fund trustees were required to declare (via their Statement of Investment Principles) the extent to which they took social, environmental and ethical considerations into account in their investment policies, as well as the policy guiding the exercise of their voting rights.

Another driver was the launch in 2000 of the United Nations Global Compact, an initiative encouraging business leaders worldwide to commit to adopting sustainable and socially responsible policies, focusing on areas such as human rights, labor, the environment and anti-corruption.

The new index series had an immediate impact, generating substantial press coverage, as well as a degree of controversy.

"The ten Principles of the 2000 UN Global Compact were very high-level in nature. The FTSE4Good Index Series provided a set of very detailed criteria, enabling people to dig into what is measurable and practical."

—Mark Moody-Stuart, Chairman, FTSE Russell ESG Advisory Committee

Continual evolution in FTSE Russell ESG index design and methodology

During the 15 years since the launch of the FTSE4Good Index Series, FTSE, and later following the merger, FTSE Russell, remained at the forefront of the accelerating trend towards sustainable investment among institutions. This has involved a continual evolution in index and product design, together with a widening of the research universe and a deepening of its methodology.

2001	2004	2007	2008	2012	2014	2016
FTSE4Good— One of the first global ESG index families	FTSE4Good US Select Index created, today used as benchmark for largest passive ESG mutual fund	FTSE4Good Environmental Leaders indexes introduced, highlighting best in class companies. The first ever Green Bond, the European Investment Bank Climate Awareness Bond, was based based on the FTSE4Good Environmental Leaders Index	FTSE Environmental Markets industrial taxonomy and indexes launched	ESG Ratings based on FTSE4Good methodology launched	Expansions of ESG Ratings coverage and methodology	New opportunities for combined FTSE Russell business, including low carbon index solutions and Russell US banchmarks

> The growing sophistication of the market place has been reflected in FTSE Russell's methodology for its ESG ratings which have a particular focus on sector specific metrics, quantitative data and measuring performance outcomes.

Over the period, FTSE Russell's measurement and assessment of ESG practices and performance has evolved in several ways. The usage of ESG parameters in investment strategies moved from a binary, exclusionary approach based on screening for compliance with ethical standards to a much more integrated approach. The growing sophistication of the market place has been reflected in FTSE Russell's methodology for its ESG ratings which have a particular focus on sector specific metrics, quantitative data and measuring performance outcomes. The Ratings are also compiled using a transparent methodology and based on information in the public domain.

There are a number of issues which were initially considered "ethical" issues, but over time the relevance of the issues to investors starts to change. Climate change at one time was very much regarded as more of an ethical than investment issue. A more recent example is tax transparency, which is now one of FTSE Russell's 14 ESG Themes. This has changed in recent years from a specialist campaign issue to an area of focus for politicians and regulators. As a result, it is appearing on investors' radars, one concern being that an investee company that appears profitable, with complex and opaque tax policies, that pays low levels of tax, may be rather less profitable once tax loopholes are closed. It is becoming more common for investors to want to understand this type of potential risk.

An inclusionary ESG approach means intensive stewardship and engagement with companies around the world. Each year, FTSE Russell's ESG analysts communicate with over 4000 companies in 47 countries, two way dialogue is achieved with over 1000, and detailed engagement with companies facing potential index deletion or trying to improve their ESG practices occurs with around 400 companies.

The evolution of ESG data, collection methods and definition

Historically, many ESG rating systems were based on private surveys of companies' procedures and behaviors. Such an approach may encourage companies to share more information about their internal operations. However, a risk in using non-public data for ESG ratings is that standards of due diligence are frequently weaker, leading to question of data credibility.

When FTSE took over responsibility for the research for the ESG data model (it previously worked with a separate research partner) in 2013, it ended the use of private surveys and now only makes use of public data in its ratings. Every company is individually contacted to check that all relevant publicly available information has been found, but no privately submitted information is accepted. More positive weight in the assessment methodology is applied where there is external verification of key performance data. An expected trend is for a shift toward investor expectation of external verification of the most pertinent data points for any given company.

New regulations and updated guidance from stock exchanges are also helping encourage and support companies towards higher and better disclosure standards.

The past, present and future of ESG data standards

Private Surveys → Public Disclosure → External Verification
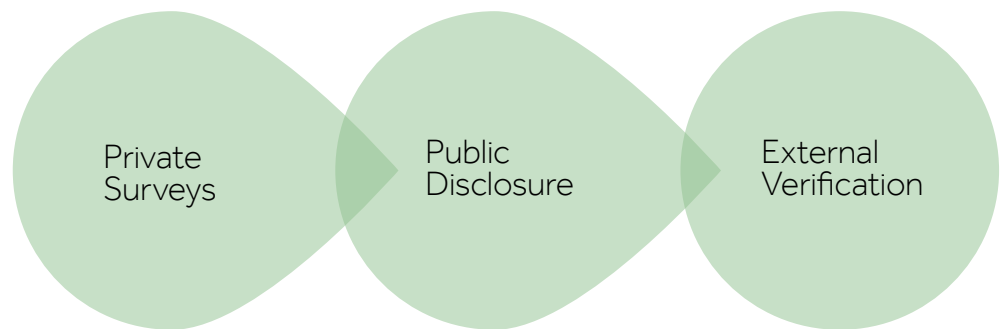
The role of external advisory committees

The FTSE Russell ESG Advisory Committee consists of senior investment market practitioners and other leading experts from a range of areas including academics, non-governmental and inter-governmental organizations, companies and trade unions.

The committee's principal responsibility is to support the FTSE Russell Governance Board by providing guidance on the criteria and construction of the indexes, discussing proposed changes, and making recommendations for changes. This helps to ensure that the ESG Ratings methodology and the associated index products, including the FTSE4Good Index Series, evolve in line with the highest standards in the industry and continue to meet market needs.

Case study: Finding the middle ground in BMS marketing

Background

Breast milk substitute (BMS) marketing criteria form an important component of FTSE's ESG framework for infant food manufacturing companies. The BMS marketing criteria are part of the Customer Responsibility Theme in our ESG Ratings methodology.

Breast milk substitutes have been a controversial topic for decades. Since the 1970s, certain pressure groups worldwide have urged a boycott against the manufacturers of BMS products as part of a broader initiative to support breastfeeding and healthy infant nutrition, especially in developing countries.

The main international standard on BMS marketing (the "WHO code"), introduced in 1981, is interpreted it in very different ways by manufacturers, NGOs and U.N. agencies, and different governments have implemented it to varying degrees.

In the past, this has led to a highly confrontational stance between the industry and certain NGOs. As a result, collaboration between industry and the infant health groups have often not been possible in many different related areas including the fortification of staple foods with micronutrients.

In many ways, the discussions over BMS marketing echoed the debates of two decades ago over supply chain labour standards and sweat shops. In that case, progress started to be made once NGOs, retailers and clothing brands started working together, for example through the Ethical Trading Initiative.

Our approach

In an effort to bridge the gap, in September 2010 the FTSE Russell ESG BMS Marketing Advisory Group introduced new BMS marketing criteria, which set minimum standards for company policies, lobbying, management systems, reporting and verification informed by the WHO code. Initially, only one company out of the five large BMS manufacturers (Nestlé) moved to meet the criteria.

To ensure independence in verifying compliance with the marketing criteria, FTSE (in consultation with a number of investors and infant health organisations) developed a verification process and then engaged an external audit firm to verify Nestlé's practices against their stated policies.

Results

Recently Danone, after almost a decade of engagement with FTSE about BMS marketing, has followed suit and now meets the criteria. Danone will now be subject to the same verification process as Nestlé.

In recognition of the importance of this work in achieving traction on this issue, first GAIN (the Global Alliance for Improved Nutrition), and then later the Bill & Melinda Gates Foundation have contributed technically and financially to support this verification work.

To further build trust and dialogue between the parties involved in the long-standing debate over BMS, FTSE Russell makes the verification reports public. In addition multi-stakeholder workshops are hosted to explore the verification process with participants from charities, responsible investor groups, NGOs, health and children's organisations, inter-governmental organisations as well as the verified companies, the audit firm, and members of the FTSE Russell ESG BMS Marketing Advisory Group, a subcommittee of the FTSE ESG Advisory Committee.

This case study shows how the maintenance of an ESG ratings system, with its associated benchmarks, can have a direct impact on corporate behaviour, while also helping to facilitate a broader public debate.

The state of global ESG disclosure

Improving but uneven disclosure levels

Corporate ESG data and information comes from multiple sources, including companies' voluntary sustainability reporting, mandatory accounting disclosures, regulatory filings, stock exchanges, NGOs, and through the media.

The FTSE Russell ESG Data Model places an emphasis on quantitative data in the calculation of ESG Ratings. The ability to ass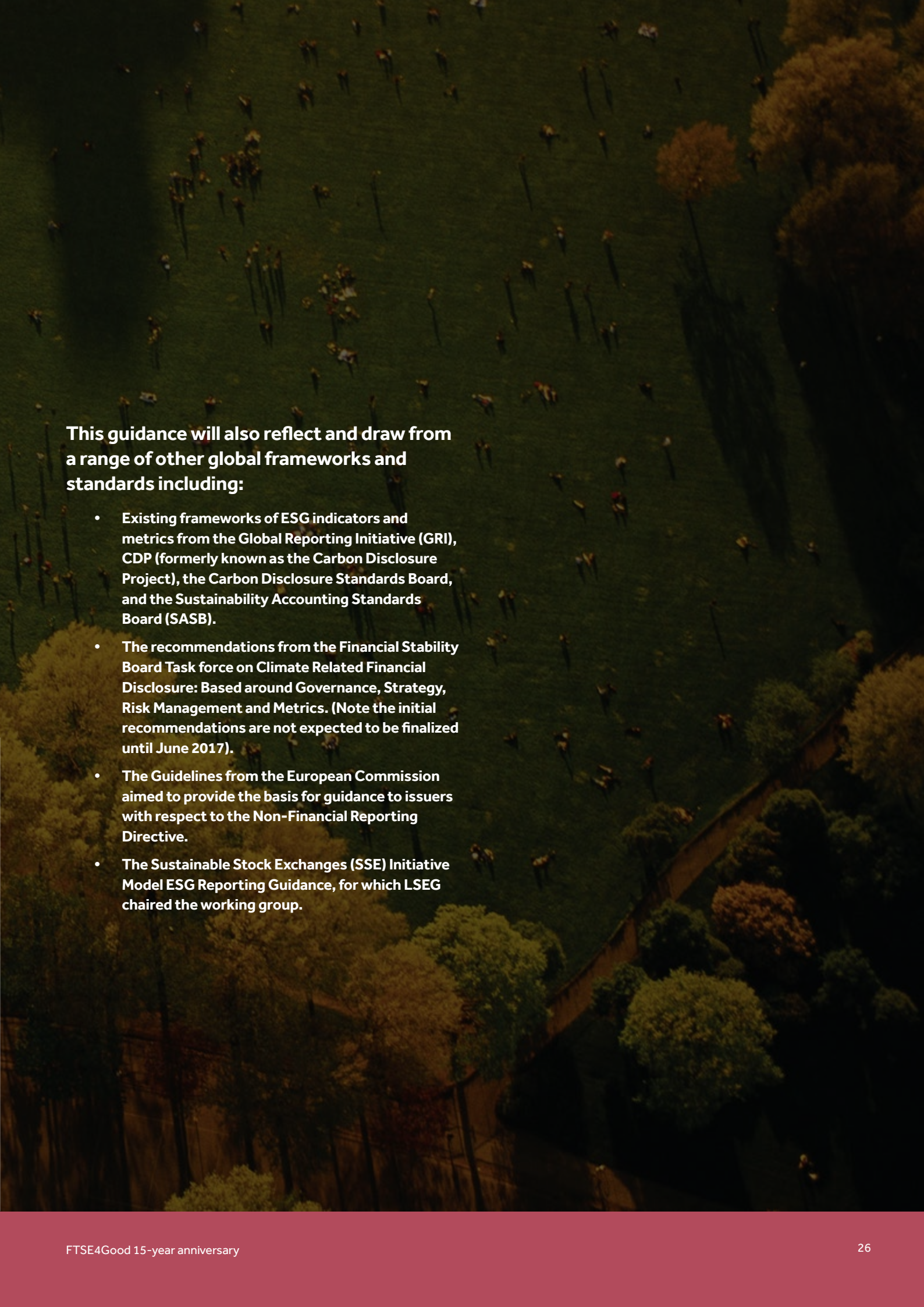ess relative corporate performance through the use of quantitative ESG data depends heavily on the availability, comparability and reliability of data. Evolving global standards in ESG reporting (see box) are driving improvements in data quality, but the disclosure levels are uneven across global markets. Sections four and five of this report highlight the current state of global ESG disclosure levels, and provide an insight into the scale of reporting improvements required to improve the availability of data across global markets.

Evolving global standard setting for ESG reporting

In early 2017 London Stock Exchange Group, of which FTSE Russell is a part, will be publishing guidance for issuers globally on voluntary ESG Reporting to investors.

This authoritative report will summarize existing reporting frameworks and provide advice for issuers based around following eight reporting priorities

1. **Core business: Explain strategic rationale**

2. **Materiality:** Ensuring investor relevance

3. **Investment Grade Data:** Consistency, reliability, comparability and timeliness

4. **Global frameworks:** Using the most appropriate standards and metrics

5. **Reporting formats:** Finding what works for your business

6. **Regulation and investor communication:** Striving for meaningful dialogue

7. **Green revenue reporting:** Ensuring visibility for low carbon products

8. **Asset classes:** Considering relevance across different asset classes

This guidance will also reflect and draw from a range of other global frameworks and standards including:

- Existing frameworks of ESG indicators and metrics from the Global Reporting Initiative (GRI), CDP (formerly known as the Carbon Disclosure Project), the Carbon Disclosure Standards Board, and the Sustainability Accounting Standards Board (SASB).

- The recommendations from the Financial Stability Board Task force on Climate Related Financial Disclosure: Based around Governance, Strategy, Risk Management and Metrics. (Note the initial recommendations are not expected to be finalized until June 2017).

- The Guidelines from the European Commission aimed to provide the basis for guidance to issuers with respect to the Non-Financial Reporting Directive.

- The Sustainable Stock Exchanges (SSE) Initiative Model ESG Reporting Guidance, for which LSEG chaired the working group.

Global League ESG Disclosure: Average quantitative ESG data disclosure rate by country

Rank	Country	Average ESG Disclosure	Average Environmental Disclosure	Average Social Disclosure	Average Governance Disclosure	Companies Researched
1	Greece	69%	70%	75%	58%	5
2	Finland	67%	77%	68%	31%	13
3	Portugal	60%	60%	71%	22%	5
4	Spain	60%	63%	70%	25%	29
5	Italy	59%	62%	68%	29%	27
6	Norway	57%	72%	53%	28%	9
7	Hungary	57%	62%	62%	33%	4
8	France	56%	65%	66%	16%	77
9	Netherlands	48%	58%	53%	16%	24
10	Colombia	47%	51%	51%	24%	11
11	Germany	47%	54%	46%	25%	59
12	Sweden	46%	58%	39%	30%	30
13	Belgium	44%	56%	46%	12%	12
14	Thailand	43%	50%	45%	12%	37
15	Denmark	43%	57%	37%	24%	17
16	United Kingdom	43%	52%	36%	32%	132
17	Austria	42%	53%	41%	20%	7
18	Brazil	40%	45%	41%	20%	56
19	South Africa	40%	41%	47%	20%	74
20	Turkey	39%	40%	48%	16%	34
21	Switzerland	38%	51%	34%	16%	42
22	Czech Republic	37%	44%	31%	33%	2
23	Russia	36%	38%	41%	18%	31
24	Taiwan	35%	44%	39%	4%	94
25	Poland	34%	43%	35%	9%	24
26	Chile	34%	32%	50%	4%	18
27	Australia	34%	40%	34%	17%	92
28	Canada	33%	42%	33%	9%	60
29	Korea	33%	37%	40%	6%	114
30	Pakistan	33%	33%	39%	18%	4
31	Japan	33%	47%	26%	3%	482
32	India	31%	29%	43%	13%	129
33	Mexico	30%	33%	32%	15%	38
34	Indonesia	25%	19%	39%	12%	27
35	Israel	24%	29%	24%	15%	25
36	Peru	24%	21%	31%	17%	2

Rank	Country	Average ESG Disclosure	Average Environmental Disclosure	Average Social Disclosure	Average Governance Disclosure	Companies Researched
37	United States	23%	33%	16%	11%	606
38	Singapore	22%	21%	31%	4%	39
39	Hong Kong	19%	20%	24%	6%	89
40	New Zealand	19%	16%	23%	17%	14
41	Malaysia	16%	14%	24%	2%	45
42	Philippines	15%	14%	21%	3%	26
43	Ireland	10%	6%	13%	22%	4
44	China	7%	6%	12%	1%	226
45	UAE	6%	3%	11%	2%	20
46	Egypt	5%	4%	6%	4%	8
	Country Average	30%	37%	31%	11%	2923

Source: FTSE Russell. Data collected from corporate reports between April 2015 and March 2016. Data accessed June 20, 2016.

The FTSE Russell ESG data model contains over 50 indicators that record quantitative information publicly disclosed by companies, covering a wide range of environmental, social and governance issues. Of the quantitative indicators, 34 have been selected to create an overview of global corporate ESG disclosure, displayed in the table. A number of indicators were not incorporated into this analysis including governance measures that form part of statutory filings, including the make-up of boards and their remuneration, as well as indicators that are specific only to small groups of companies.

This table displays the percentage of companies disclosing quantitative information where this information is determined to be applicable to the companies' operations by the FTSE Russell Exposure methodology. The universe of companies is the FTSE All-World Index of 2,923 companies defined as large and mid-capitalization.

The table above shows a huge variation in disclosure levels across different markets. The average disclosure rate globally is 30% across these 34 quantitative ESG data points. The disclosure rate is highest for environmental data at 37%, then social data at 31%, with governance data least well reported at 11%. It is important to highlight that under governance only three indicators are included,

all drawn from the anti-corruption Theme. Other more standard governance data points, such as number of independent board directors, are highly reported and therefore were left out of the analysis.

Greece tops the table with average ESG disclosure of 69%, although it is important to note that this was based on only five companies. Southern Europe does extremely well on disclosure with Portugal third, Spain fourth and Italy fifth. All have higher social disclosure than environmental disclosure.

Scandinavia is generally regarded as having some of the more advanced levels of ESG integration by investors and the analysis indicates that corporate reporting is also better in these countries: Finland comes in second, Norway sixth and Sweden twelfth. Unlike the Mediterranean markets, the disclosure in these markets is higher on environmental rather than social metrics.

Although developed markets tend to have better disclosure than emerging markets this is not always the case. Greece comes in first, Hungary comes in seventh, Colombia in tenth, Brazil is eighteenth and South Africa is positioned nineteenth, with the UK only just ahead in sixteenth position.

Case study: Carbon emissions disclosure

One particular metric which has some of the highest levels of reporting is greenhouse gas emissions, reported in tonnes of carbon dioxide equivalent emissions. This often gets referred to as "carbon reporting" and the disclosure of this metric has reached an important tipping point. If you consider all 2,923 large and mid cap companies globally (taken from the FTSE All-World Index constituents), in developed and emerging markets, 60% now disclose their carbon emissions. However, there are still significant regional differences in disclosure (see below). While 80% of European companies now disclose three years or more of GHG emissions, reporting levels are lowest in the Asia-Pacific region (51%). However, the rate of change is very different, with Asia-Pacific increasing by 11% between when FTSE Russell conducted research in 2014-15 to 2015-16. North American disclosure levels, despite being above those of Asia-Pacific are behind those of South America and North America is also the region that has the lowest rate of disclosure improvement, at a sluggish 2%.

2014 GHG emissions disclosure rate and 2013-2014 change in disclosure rate

Legend: ■ 2014 disclosure rate   ◆ Year on year change

This chart shows the percentage of companies disclosing three years of GHG emissions data (Scopes 1 and 2). Source: FTSE Russell. Data accessed as of June 20, 2016.

Instead of by region, analysis can be conducted comparing Developed markets and both categories of Emerging markets (Advanced Emerging and Secondary Emerging). Although Developed markets have better disclosure levels, Advanced Emerging countries are very close to closing the gap and have a much higher disclosure improvement rate, suggesting that they may over take in the future (see below). Note that Advanced Emerging markets include countries such as Brazil and South Africa while countries including China and India are defined as Secondary Emerging. Full details on country classification are available on the FTSE Russell website.

There is a range of different reporting regulations or guidelines that in many markets encourage carbon reporting. In the United States there is regulatory guidance issued in 2010 by the Securities and Exchange Commission (SEC) to file reports to the federal regulator on fossil fuel use and carbon emissions — along with other indicators of environmental performance — and to disclose them to investors.[3] Furthermore, in 2016 the SEC has been working on new disclosure rules for public companies, which could include mandatory disclosure of risks related to climate change. Despite these reporting efforts only 42% of US companies have disclosed carbon emissions.[4]

In the UK, in 2013 under the Amendments to the Companies Act 2006, a number of ESG reporting requirements were introduced, including those for companies listed on the main market of the London Stock Exchange to report their greenhouse gas emissions on a comply or explain basis. This requirement has had significant support both from companies and investors and has contributed to UK listed companies having one of the highest levels of carbon emissions disclosure globally at 99% for large and mid cap companies (although this drops to 92%[5] for the FTSE All-Share Index) whereas the average for large and mid cap companies across Europe is 80%.

2014 and 2013 GHG emissions disclosure rate and 2013-2014 change rate in disclosure rate

	Developed	Advanced Emerging	Secondary Emerging
2014 Disclosure rate (%)	69%	64%	24%
2013 Disclosure rate (%)	66%	57%	21%
Yoy change (%)	5%	12%	12%

Source: FTSE Russell. Data accessed as of June 20, 2016. The full FTSE classification of markets can be accessed at http://www.ftse.com/products/downloads/Matrix-of-Markets_latest.pdf

[3] *https://www.sec.gov/rules/interp/2010/33-9106.pdf*

[4] *413 US companies disclosed their carbon emissions out of the 996 analyzed based on data collected between 2015-2016. This ratio reaches 57% when focusing only on large and mid caps.*

[5] *290 UK companies disclosed their carbon emissions out of the 314 analyzed based on data collected between 2015-2016. This ratio reaches 99% when focusing only on large and mid caps.*

Reporting requirements for investors

A more recent development has been a growing call on investors; both asset owners and fund managers to report on the ESG characteristics of their portfolios. This has come about through both market and regulatory mechanisms.

In August 2015, under Article 173 of a law on "Energy Transition for Green Growth," **France required institutional investors to account for how they integrate sustainability considerations into their investment policies.** The requirements of this law are closely correlated to the three FTSE Russell Sustainable Investment Models outlined in Section 1; (i) ESG, (ii) carbon exposure and (iii) green economic transition (green revenues).

SECTION 5

# Measuring and mapping ESG performance

Using performance indicators to measure impact

A core component of the FTSE Russell ESG Ratings methodology is the measurement of hard performance outcomes. The Ratings and associated methodology put weight on quantitative and sector specific indicators, but most weight is applied to the performance indicators.

In many cases, quantitative data points are collected but the data may not be widely enough reported or suitably robust to use to assess performance; an example is lost-time injury rates where each company reports in different ways which makes comparisons infeasible. Analysis in this case may even give entirely contrary results where a company which has very good health and safety systems and ensures all injuries are recorded is likely to have a higher reported injury rate and thus may appear to be performing less well than a company that has weaker systems and only reports on a sub-set of the injuries.

FTSE Russell currently measures 11 performance indicators. Many of the other indicators assess quality of management while performance indicators measure output and impacts on a relative basis. For most performance indicators, companies are grouped into relative performance quartiles which determines their score. Assessing performance is an important component of the ESG Ratings with these indicators given significant weight, in particular to highlight areas of business risk that are useful as a basis for investor engagement. Where companies are assessed for performance indicators that are applicable and they do not disclose relevant information the model treats this as equivalent to bottom quartile performance.

Carbon emission per unit of energy production
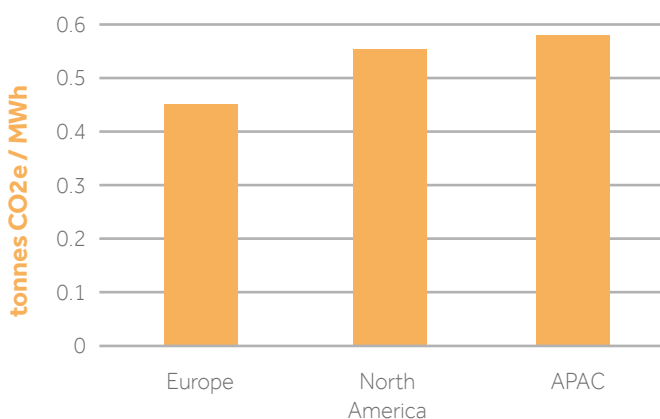
This figure displays the median of the intensities reported by companies in each region. South America was excluded from the analysis because no company disclosed the ratio or raw data appropriately.

Source: FTSE Russell. Data collected from 2015-16. Data accessed on June 20, 2016.

Climate change: Europe has the most carbon efficient energy generation

Performance indicator case study: GHG emissions per megawatt hour

The electric utility sector is facing increasing pressure from current and future carbon emissions trading schemes and other economic incentive mechanisms to reduce the carbon intensity of energy generation. The amount of carbon emitted by the utilities can therefore have a direct impact on their profit margins.

Our approach

In this section we focus on the data collected in 2015-16 for 92 "conventional electricity" producers from the FTSE All-World Index constituents. The relevant performance metric in this case is the tonnes of CO2e per MWh of energy generation. It is perhaps surprising, but the disclosure level even for these companies is often poor. Only North America reaches a disclosure rate of above 50%, while South America has no disclosure from the nine utility companies analyzed.

Furthermore, there are large regional differences in the carbon intensity of energy generation;European utilities lead the way with a median intensity of 0.45 tonnes of CO2e per megawatt hour, while APAC lags behind (27% higher) with a median of 0.573 tonnes of CO2e per megawatt hour (see figure at right).

Health and Safety: India has highest reported incident rates

Performance indicator case study: Work-related fatalities

Within the Health and Safety theme a number of quantitative data points are collected, including the absolute number of fatalities. This data is collected for companies operating in industries where fatalities are more likely: in particular extractives, heavy engineering and construction. This information is normalized by employee numbers to account for the size of the organization. Companies are then categorized into peer groups of companies operating in the same ICB Supersector.

Within the period of research, 964 companies were identified as having operations in relevant industries and hence were researched for fatalities data. Only 39% of these companies, 376, provided information relating to the number of employee fatalities. A large proportion of these companies with information disclosed reported that there were no fatalities (57%) in their most recent fiscal year, whereas 10% of these had five or more fatalities.

For the purpose of relative calculations in the ESG Ratings, the number of fatalities is normalized by employee numbers. Of the 376 companies providing fatalities data, 338 also publish information on employee numbers.

A Supersector comparison of work-related fatalities shows that the highest death rates occur in Subsectors involved in extraction, construction and heavy engineering: automobiles and parts, construction and materials, basic resources and industrial goods and services. In absolute terms however, the highest fatalities occurred in the Oil & Gas Supersector, followed by Chemicals and Basic Resources. This differs from the information in the table below which illustrates the relative fatality rate across Supersectors.

Supersectors with highest fatalities per 1,000 employees

ICB Supersector	Average fatality rate per 1,000 employees	Number of companies
Construction & Materials	0.14	41
Basic Resources	0.12	59
Oil & Gas	0.09	66
Real Estate	0.05	23
Food & Beverage	0.05	11
Chemicals	0.04	45
Industrial Goods & Services	0.04	50
Automobiles & Parts	0.04	2
Utilities	0.03	30
Health Care	0.02	3

This table utilizes data from all of the 338 companies disclosing data on fatalities and employees, determined to be of elevated exposure to health and safety risks. Source: FTSE Russell. Data collected from April 2015-16. Data accessed on 20 June 2016.

Regions & countries with highest fatalities / 1,000 employees for high risk ICB Super-sectorsthe ESG Model.

Country	Average fatality rate per 1,000 employees	Number of companies with data disclosed
India	0.31	17
France	0.16	5
Japan	0.13	11
Turkey	0.13	3
UK	0.13	18

Source: FTSE Russell. Data collected from corporate reports between April 2015 and March 2016.

Data accessed as of June 20, 2016.Note that this data draws from 200 companies in the five ICB Supersectors with the highest fatality rates. Only countries with more than three companies disclosing data are individually highlighted.

Region	Average fatality rate per 1,000 employees	Number of companies with data disclosed
Asia-Pacific	0.16	82
EMEA	0.07	72
Americas	0.05	46

This data suggests that fatalities are most prevalent among companies in the Asia-Pacific region, relative to those from EMEA or the Americas. The relatively higher average fatality rate for companies in Asia-Pacific is strongly influenced by Indian extractives companies that have seen significant numbers of serious incidents occurring in recent years. Fatality rates in EMEA and Americas are much lower, with serious incidents within the operations Construction and Energy companies influencing the average rates.

The data highlights the elevated risks in the Construction and Materials Supersector, which are higher than both the Basic Resources and Oil & Gas Supersectors. Information in the table also shows a much lower level of fatalities in the Chemical, Industrial Goods & Services, and the Automobile & Parts Supersectors, which could be a reflection of stronger health and safety practices.

Taking the five Supersectors where fatalities are most common (and on average greater than 0.05 per 1,000 staff), it is possible to analyze country differences. It is important to note that the country refers to the country of domicile not the country where the fatalities took place. With most of these companies operating across multiple countries the accidents leading to the fatalities could be occurring in multiple different locations even for the same company.

SECTION 6

Past, present and future of Sustainable Investment

Since the FTSE4Good Index Series was launched in 2001, there has been a revolution in the use of ESG data by the investment community with increasing investor scrutiny of corporate ESG performance. At the time of launch this was niche, but it is now becoming a normal part of investment processes. Across all regions growing numbers of asset owners, asset managers, investment consultants, benchmark calculators and investment banks are routinely integrating this type of ESG analysis into their processes which impacts investment flows. As this report demonstrates, there is a need for corporate disclosure to keep pace with the needs of the investment community. Although many companies have high quality, comprehensive ESG reporting there is an imperative for wide-ranging improvements in reporting globally.

FTSE Russell looks forward to supporting the investment community in the next phase of this journey. The approaches to ESG integration in both active and passive portfolios will continue to advance in sophistication. This will require further growth in the breadth, depth and functionality of ESG data analytics and benchmarks that are available to the market. However, this all relies on data, much of it reported by companies, and hence FTSE Russell will encourage and support corporate issuers globally in their efforts to improve public reporting.

[6] Eurosif European SRI Study 2016

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