Sustainable Stock Exchanges Initiative

The SSE is a UN Partnership Program of:

UNITED NATIONS UNCTAD

UN GLOBAL COMPACT

UNEP FINANCE INITIATIVE

Principles for Responsible Investment

2018 REPORT ON PROGRESS

A paper prepared for the Sustainable Stock Exchanges 2018 Global Dialogue


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NOTE

The designations employed and the presentation of the material in this paper do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

This paper is intended for learning purposes. The inclusion of company names and examples does not constitute an endorsement of the individual exchanges or organisations by the United Nations Conference on Trade and Development (UNCTAD), the UN Global Compact, UN Environment or the Principles for Responsible Investment (PRI).

ACKNOWLEDGEMENTS

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Additional substantive contributions were received from Richard Bolwijn (UNCTAD), Danielle Chesebrough (PRI & UN Global Compact), Elodie Feller (UNEP FI) and Will Martindale (PRI).

This paper is presented as an informal contribution to the discussions at the SSE Global Dialogue on 23 October 2018, which takes place within the UNCTAD World Investment Forum in Geneva, Switzerland. The views expressed in this paper are those of UNCTAD, the UN Global Compact, UN Environment and the PRI unless otherwise stated.

The manuscript was edited by Mark Nicholls. The report was typeset and the charts and infographics designed by Pablo Cortizo.

ABOUT THE SSE

The SSE initiative is a UN Partnership Programme organised by UNCTAD, the UN Global Compact, UNEP FI and the PRI. Launched in 2009 by the UN Secretary General, the SSE's mission is to provide a global platform for exploring how exchanges, in collaboration with investors, companies (issuers), regulators, policymakers and relevant international organizations, can enhance performance on ESG (environmental, social and corporate governance) issues and encourage sustainable investment, including the financing of the UN Sustainable Development Goals. The SSE seeks to achieve this mission through an integrated programme of conducting evidence-based policy analysis, facilitating a network and forum for multi-stakeholder consensus-building, and providing technical assistance and advisory services.

MESSAGE FROM AVIVA INVESTORS

Aviva Investors is a member of the SSE Investor Working Group

At Aviva, we've been thinking long-term for over 300 years. We can trace our history back to 1696 and we aim to leave a positive legacy for those who come after us.

The world has a clear set of targets for a sustainable future that works for everyone: the UN Sustainable Development Goals (SDGs). Delivering these goals is everyone's responsibility – including the world's companies, and finance firms like Aviva – but without shifting private finance flows, we simply won't achieve them.

This is a complex problem, so clear information on how companies perform on sustainability issues is invaluable. That is why Aviva supports this United Nations Sustainable Stock Exchanges work to rank stock exchanges on how their issuers disclose sustainability data. This important study puts a spotlight on the performance of stock exchanges and the companies they list.

Building on earlier independent studies by Aviva and Corporate Knights, this 2018 ranking shows signs of progress, with improvements in the disclosure of key sustainability indicators. It's also encouraging to see two emerging economy exchanges in the top ten. But there's still a great deal of improvement needed. The trends shown in Part I of this report are also welcome, showing that the urgency of addressing sustainability issues is increasingly being recognized by some stock exchanges.

Clearly, encouraging more firms to disclose still needs more work. Stock exchanges around the world should promote higher disclosure standards from companies who wish to list, and encourage their regulators and standard-setters to introduce requirements in this area.

But improving disclosure by itself doesn't fully address the challenge of meeting the SDGs. Companies need to be publicly held to account over their impact on the planet. That's why we launched the World Benchmarking Alliance (WBA) with the Index Initiative and the governments of Denmark, The Netherlands and the United Kingdom earlier this year. The WBA is a global institution that will rank the world's largest companies on their performance against the SDGs. By introducing an element of competition and creating a race to the top for businesses, we can help deliver a better future for everyone.

I would like to commend the UN SSE for this report. We can only change the world if businesses are acting; businesses will only act if what they are doing is measured.

Euan Munro
Chief Executive Officer
Aviva Investors

MESSAGE FROM FTSE RUSSELL

FTSE Russell is part of London Stock Exchange Group. LSE Group is an SSE Partner Exchange and Chaired the 2015 SSE Advisory Group on ESG Disclosure

In our role as a global benchmark provider we are acutely aware of how ESG data is being built into investment processes and mandates including passive strategies. High quality data disclosure from issuers is essential for this. That is what makes this report so important; it measures and tracks how issuer disclosure over time is improving across different markets.

FTSE Russell is therefore delighted to support this work as the expert partner providing data that underpins the analysis in Part II of this report.

The pressures and requests on companies and other issuers for ESG related disclosure can be varied and confusing. Stock exchanges and index providers are aptly placed to connect investors and companies and to facilitate discussion of ESG issues. Part I of this report shows significant growth in recent years in the number of exchanges engaged in ESG activities. Exchanges that promote transparency and high quality ESG reporting are helping companies to understand that this disclosure is an important driver of value creation and are addressing new information demands from investors. Index providers, such as FTSE Russell, are also focused on providing high quality ESG data to drive the data, analytics and indexes that institutional investors need.

We have tried to play our role here through what we call "STEP Change" (Stewardship, Transition and Engagement Program for Change) which sets out how we can work together to support a sustainable transition. An important early step was supporting the development of the Sustainable Stock Exchanges initiative's Model Guidance on ESG Reporting, and through the launch of London Stock Exchange Group's issuer guidance last year.

In part II's analysis, in line with FTSE Russell's ESG methodology, there is a focus on investor materiality. One size does not fit all with ESG reporting; for example, reporting of health and safety data, such as annual staff fatalities, should be expected from industries where this is a significant risk, such as mining or construction; but is much less relevant for software development firms. This type of sector materiality has been applied in this analysis.

As analysis in this report shows, the Japanese market is making good progress following the important actions taken by the Japanese government pension fund, GPIF, catalysing improved disclosure by issuers. Other markets making good progress are those of Thailand and South Africa, where both stock exchanges have been very active in driving improved reporting. The Stock Exchange of Thailand and the Johannesburg Stock Exchange taking respectively seventh and eighth spots in ESG disclosure is an excellent demonstration that emerging markets can be ahead of developed markets.

The analysis in this report can help encourage some healthy competition between markets to enhance their information disclosure. This is important, but we all need to collaborate to enhance data, dialogue and the investment required for a smooth transition to a sustainable, low carbon economy. We look forward to continuing to play our part supporting both issuers and investors navigating the transition.

Mark Makepeace
Group Director, Information Services
Division & CEO, FTSE Russell
London Stock Exchange Group

EXECUTIVE SUMMARY

Global challenges – from climate change and gender equality to job creation and poverty reduction – require multilateral and multi-stakeholder solutions. To help address these international challenges, the SSE serves as a platform for promoting good practice among stock exchanges, which are uniquely positioned to influence their markets in ways that few other actors can.

Launched in 2009, the United Nations Sustainable Stock Exchanges (SSE) initiative was a response to demand from exchanges for a place to come together with investors, companies, regulators and policy makers to share leading practices and address common challenges in a multi-stakeholder environment. Since 2012, when the first five stock exchanges made a public commitment to advancing sustainability in their markets, the initiative has grown into what is now a global partnership platform that includes most of the world's stock exchanges. Through the SSE, exchanges have access to capacity-building activities, guidance, research and other support to assist in their efforts to contribute to sustainable development.

Over 2016-18, the period covered by this report, the SSE has added to its suite of capacity-building documents to include guidance on gender equality (March 2017), a comprehensive report on green finance (November 2017) and a sharing of experiences on how securities regulators can support the UN Sustainable Development Goals (SDGs) (October 2018).

Alongside its guidance on gender equality, the SSE continues to support exchanges' awareness-raising activities and has seen continued growth in the participation of exchanges in the Ring the Bell for Gender Equality event series every year around International Women's Day. In addition to the Green Finance publication, which sets out 12 action points stock exchanges can employ to support green finance in their markets, the SSE has held two region-specific events. In 2017, the SSE focused on trends in Asia at the China Social Investment Forum week in Beijing. The following year, the initiative worked with the Mexican and Argentinian stock exchanges (Bolsa Mexicana de Valores and Bolsa de Comercio de Buenos Aires) on growing green finance in Latin America, through an event in Buenos Aires and the translation of the SSE's Green Finance Action Plan into Spanish.

The SSE continues to support UN and financial sector collaboration in support of the Paris Agreement and green finance through its presence at COP events. In 2017, the SSE launched its green finance publication at COP23 in Bonn, Germany, in partnership with the Luxembourg Stock Exchange. The event included a series of topical workshops and a high-level panel discussion on how to simultaneously encourage greener financial markets and promote green products.

Other events the SSE coordinated in 2017 and 2018 focused on ESG disclosure. In 2017, the SSE held a technical workshop in Berlin on closing the environmental, social and governance (ESG) data gap and financing the SDGs, in partnership with GIZ and Ceres. In 2018, the SSE partnered with the International Finance Corporation (IFC) and the London Stock Exchange to further these discussions in London at an ESG roundtable. The SSE also held a meeting of its newly formed Securities Regulators Advisory Group in Geneva in 2018 for the development of its report on securities regulators and the SDGs.

PROGRESS REPORT ON STOCK EXCHANGES' SUSTAINABILITY ACTIVITIES

Part I of this report analyses the sustainability activities undertaken by the world's stock exchanges. The last two years have seen a significant growth in stock exchange activities promoting sustainability and transparency in their markets. As of the third quarter of 2018, 78 stock exchanges had committed to promoting sustainable and transparent markets by joining the SSE, and 66 stock exchanges were engaging with at least one of the six sustainability activities tracked by the SSE (see figure below).

In particular, the number of green or sustainability bond listing segments has tripled from five in 2016 to 15 in the third quarter of 2018, expanding rapidly in line with the exponential growth in the green bond market. Guidance and education activities also accelerated over the last two years: written guidance on ESG disclosure grew 85% between 2016 and late 2018, bolstered by the SSE's campaign and Model Guidance on this topic. More broadly, sustainability education through training of companies and investors has also taken off in recent years, increasing 65% in the last two alone. A full overview of stock exchanges' sustainability activities can be found in Annex 1.

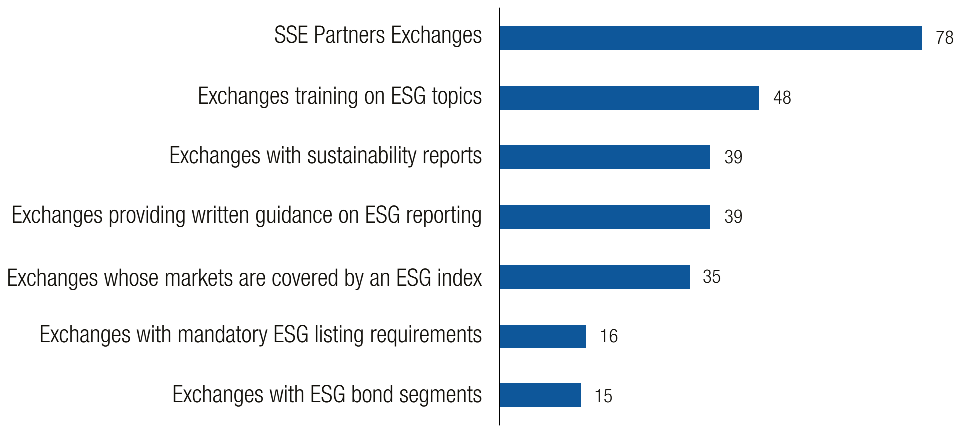
Continued growth in stock exchange engagement with sustainability activities indicates a market demand for more information on sustainability and a growing understanding of the materiality of ESG issues to corporate financial performance. These developments were in line with new outcomes at the international level during the 2016-18 period. In 2017, major new reports were published by the Financial Stability Board's Task Force on Climate-related Disclosures (TCFD),[1] and the European Commission's High-Level Expert Group on Sustainable Finance (HLEG).[2] In 2018, several committees convened by the International Organization of Securities Commissions (IOSCO) began discussions on sustainable finance, while the World Federation of Exchanges (WFE) launched its sustainability principles (see Box I.2). These developments are indications of the growing global consensus that ESG issues should be better integrated into corporate reporting and investment decision making.

MEASURING SUSTAINABILITY DISCLOSURE

Part II of this report provides an analysis of the disclosure practices of more than 4,300 companies listed on 35 stock exchanges around the world. The results find comparatively good disclosure practices at a number of exchanges, with Nasdaq Helsinki topping the ranking for overall disclosure rates, the Stock Exchange of Hong Kong for growth in disclosure, and Nasdaq Copenhagen for timeliness of disclosure. While Europe has often been seen as the leader in sustainability reporting, the results of this analysis indicate that sustainability disclosure is picking up in areas outside Europe: with two emerging markets (South Africa's Johannesburg Stock Exchange and The Stock Exchange of Thailand) in the top 10 for overall disclosure rates, and with four more in the top 10 by disclosure growth rate. Among large stock exchanges (those with at least 100 listed companies with over $1 billion in sales) the London Stock Exchange had the highest disclosure rate for greenhouse gas (GHG) emissions, with a near-perfect 97% disclosure rate for its listed companies.

Figure 1 **Stock exchanges acting on sustainability**

Number of stock exchanges as of Q3 2018



Source: SSE database.

A common thread among many of the top exchanges for disclosure, and particularly of GHG emissions, is the presence of regulation on one or more indicators evaluated. In all of the top 10 exchanges, in both developed and emerging markets, some form of regulation mandates disclosure of one or more of the indicators evaluated by all, or a subset of, listed companies. GHG emissions disclosure was the most reported indicator, which also may be related to regulatory action in certain jurisdictions, such as France's 2010 Grenelle II Law and the United Kingdom's 2013 update to the 2006 Companies Act. These two pieces of regulation have elements that make them particularly effective: they are mandatory, specific in terms of which disclosures are required, and applicable to a majority of listed companies in their respective jurisdictions.

While a number of markets have seen high growth in disclosure, this analysis highlights that there remains much to be done. Despite the Paris Agreement, there has been no growth in GHG disclosure by the companies analysed from 2015-16, and more than half of the companies evaluated provide no data on their GHG emissions. Investors, stock exchanges and regulators all have a role to play in encouraging greater disclosure on this and other ESG metrics. The SSE will continue to work with all capital market participants to further enhance disclosure and contribute to the growth of sustainable and transparent capital markets that are aligned with the world's sustainable development goals.

Maurice Bauer (Secretary General, LuxSE) Chairs meeting of the SSE Green Finance Advisory Group, 2017.

CONTENTS

FIGURES, TABLES AND BOXES

Figures

Tables

Boxes

I. PROGRESS REPORT

In adopting the SDGs[3] and the Paris Agreement on Climate Change,[4] UN member states have committed to reshaping the policy landscape within which the financial system, market participants, regulators and wider stakeholders operate. Over the past two years, the organisers of the SSE initiative – UNCTAD, the UN Global Compact, UNEP FI and the PRI – together with other organisations around the world, have initiated projects, convened global gatherings and produced major reports discussing and analysing the structure, operation and sustainability of today's financial system.

Among the advances over the last two years are the launch of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) (see Box I.1), the European Commission's Technical Expert Group on Sustainable Finance and its High-Level Expert Group (HLEG) on Sustainable Finance, and the World Federation of Exchanges (WFE) sustainability principles (see Box I.2). In addition, the International Organization of Securities Commissions (IOSCO) has engaged with the topic of sustainability through various groups and activities in the last two years.

Box I.1 Climate Disclosure: The TCFD's recommendations

Given the potential impact from climate change on financial intermediaries and investors, the G20 Finance Ministers and Central Bank Governors asked the Financial Stability Board (FSB) to review how the financial sector can consider climate-related issues. As a part of its review, the FSB identified the need for better climate-related disclosure, and established the Task Force on Climate-related Financial Disclosures to develop voluntary, consistent climate-related financial reporting guidelines for companies and investors. The TCFD reflected on the principle of materiality and climate-related disclosure, recommending climate-related information be disclosed in mainstream (i.e. public) financial filings. It highlights stock exchanges as key stakeholders that can make a valuable contribution towards the adoption of its recommendations.

Despite demand for climate-related information from investors, its supply by listed companies has not yet become widespread. For example, fewer than half (48%) of the 4,344 companies assessed in Part II of this report are disclosing GHG (scope 1 & 2) emissions, which are the most frequently disclosed of seven indicators evaluated.

The TCFD recommendations highlight a set of risks and opportunities facing markets today, as well as their potential financial impact. In addition to the financial risks listed by the TCFD, some other material risks related to the environment include: disruption to supply chains; loss of access to raw materials; loss of biodiversity; loss of arable land; social upheaval; increased healthcare costs; mass migration; and extreme weather events. Stock exchanges and other capital market players can help mitigate these risks by enhancing their work on green finance.

Climate-related opportunities and their financial impact

Climate-related opportunities:

- Access to new markets
- Use of public-sector incentives
- Access to new assets and locations needing insurance coverage

Potential financial impact:

- Increased revenue through access to new and emerging markets (e.g. partnerships with governments, development banks)
- Increased diversification (e.g. green bonds and infrastructure)

Climate Related Risks and their Financial Impact

Climate-related risks:

- Changing customer behaviour
- Uncertainty in market signals
- Increased cost of raw materials

Potential financial impact:

- Reduced demand for goods and services due to shifts in consumer preferences
- Increased production costs due to changing input prices (e.g. energy, water) and output requirements (e.g. waste treatment)
- Abrupt and unexpected shifts in energy costs
- Changing revenue mix and sources
- Re-pricing of assets and speed of re-pricing (e.g. fossil fuel reserves, land valuations, securities valuations)

Source: SSE Green Finance Action Plan.

In 2018, for example, the IOSCO Africa and Middle East Regional Committee Annual Conference in Morocco and the IOSCO Asia Pacific Hub in Malaysia both hosted discussions on green finance, while in London in 2018 IOSCO announced that it is evaluating the feasibility of launching a new IOSCO Sustainability Network devoted exclusively to this topic.

Alongside these international policy and regulatory developments, there has been rapid evolution in market practices and instruments designed to promote investment in sustainable businesses and support the achievement of the SDGs. Market innovations related to sustainable development continue to attract interest from investors, and the positive track record of sustainability-themed products is reinforcing the views of a growing number of asset managers that sustainability issues are material to long-term investment performance.

Capital market policies and instruments designed to promote investment in sustainable businesses and support the achievement of the SDGs are an increasingly important feature of the investment landscape. Stock exchanges are key actors in promoting new policies, tools and instruments, as are institutional investors (including both asset owners and asset managers) and securities market regulators. The sustainability practices of stock exchanges can be a useful benchmark of innovation in sustainable finance, given stock exchanges' position at the intersection of portfolio investors, listed companies and capital market authorities. The SSE initiative, which now includes most of the world's stock exchanges (see Figure 1.1), illustrates the growing attention that exchanges are paying to sustainability in their markets.

Since 2012, when the four founding SSE Partner Exchanges signed a commitment to promote sustainable and transparent capital markets, the number of stock exchanges committing to sustainability has grown rapidly (see Figure I.2). Since the previous report on progress in 2016, membership has grown 26%. As of late 2018, public commitments to advancing sustainability in their markets have been made by 78 partner exchanges from five continents, on which over 45,000 companies are listed, which represent a market capitalisation of more than US$80trn. This includes nine of the 10 largest exchanges in the world, as well as a number of small exchanges from developing countries.

Figure I.1 SSE members around the world

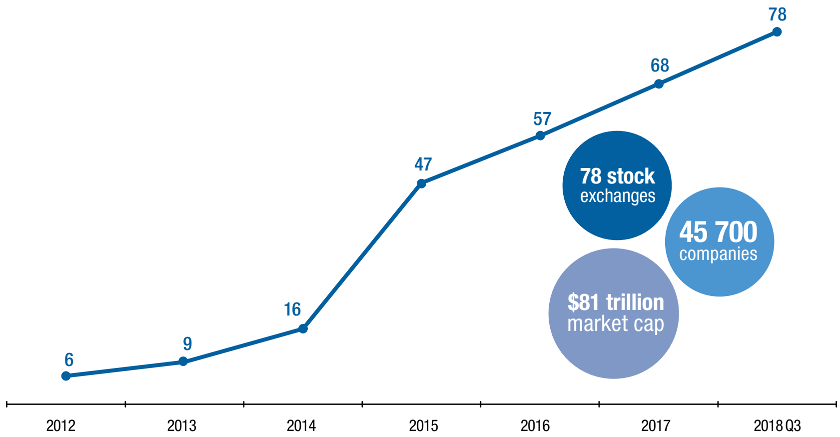
Source: SSE database.

Argentina – Bolsas y Mercados Argentinos and Bolsa de Comercio de Buenos Aires
Australia – Australian Securities Exchange
Australia – Sydney Stock Exchange
Bangladesh – Chittagong Stock Exchange
Bangladesh – Dhaka Stock Exchange
Belarus – Belarusian Currency and Stock Exchange
Belgium – Euronext Brussels
Bosnia and Herzegovina (Republic of Srpska) – Banja Luka Stock Exchange
Botswana – Botswana Stock Exchange
Brazil – B3
Canada – Aequitas NEO Exchange
Chile – Bolsa de Comercio de Santiago
China – Shanghai Stock Exchange
China – Shenzhen Stock Exchange
Colombia – Bolsa de Valores de Colombia
Costa Rica – Bolsa Nacional de Valores
Denmark – Nasdaq Copenhagen
Egypt – Egyptian Exchange
Estonia – Nasdaq Tallinn
Finland – Nasdaq Helsinki
France – Euronext Paris
Germany – Deutsche Börse
Greece – Athens Stock Exchange
Hong Kong – Hong Kong Exchanges and Clearing
Iceland – Nasdaq Iceland
India – BSE India
India – National Stock Exchange of India
Italy – Borsa Italiana
Jamaica – Jamaica Stock Exchange
Japan – Japan Exchange Group, Inc.
Jordan – Amman Stock Exchange
Kazakhstan – Kazakhstan Stock Exchange
Kenya – Nairobi Securities Exchange
Korea (Republic of) – Korea Exchange
Kuwait – Boursa Kuwait
Latvia – Nasdaq Riga
Lithuania – Nasdaq Vilnius
Luxembourg – Luxembourg Stock Exchange
Malaysia – Bursa Malaysia

Mauritius – Stock Exchange of Mauritius
Mexico – Bolsa Mexicana de Valores
Mongolia – Mongolian Stock Exchange
Mongolia – Mongol Securities Exchange
Morocco – Casablanca Exchange
Namibia – Namibia Stock Exchange
Netherlands – Euronext Amsterdam
New Zealand – NZX Limited
Nigeria – Nigerian Stock Exchange
Norway – Oslo Børs
Panama – Bolsa de Valores de Panamá
Peru – Bolsa de Valores de Lima
Poland – Warsaw Stock Exchange
Portugal – Euronext Lisbon
Qatar – Qatar Stock Exchange
Romania – Bucharest Stock Exchange
Rwanda – Rwanda Stock Exchange
Serbia – Belgrade Stock Exchange
Seychelles – Trop-X
Singapore – Singapore Exchange
Slovenia – Ljubljana Stock Exchange
South Africa – Johannesburg Stock Exchange
Spain – Bolsas y Mercados Españoles
Sri Lanka – Colombo Stock Exchange
Sweden – Nasdaq Stockholm
Tanzania – Dar es Salaam Stock Exchange
Thailand – Stock Exchange of Thailand
Tunisia – Bourse des Valeurs Mobilières de Tunis
Turkey – Borsa Istanbul
Uganda – Uganda Securities Exchange
United Arab Emirates – Dubai Financial Market
United Kingdom – Euronext London
United Kingdom – London Stock Exchange
USA – Nasdaq
USA – NYSE
Vietnam – Hanoi Stock Exchange
Vietnam – Ho Chi Minh Stock Exchange
Zimbabwe – Zimbabwe Stock Exchange
Western Africa – BVRM

Figure I.2 **SSE membership continues to grow**

Year-end number of SSE partner stock exchanges
(except 2018, for which the figure is for the end of the third quarter)



Source: SSE database.

Box I.2 **The WFE sustainability principles**

At its 58th annual meeting in October 2018, the World Federation of Exchanges launched a set of five principles on sustainability. These principles mark a major milestone in the evolution of WFE members' engagement with sustainability. With their launch, WFE member exchanges formally acknowledge their role in fostering and promoting the development of a sustainable financial system, ensuring that finance flows are consistent with a pathway towards low greenhouse gas emissions and climate-resilient development, and promoting the transition towards an inclusive and sustainable economy.

The principles commit WFE members to:

1. Educate participants in the exchange ecosystem about the importance of sustainability issues;
2. Promote the enhanced availability of investor relevant, decision-useful ESG information;
3. Actively engage with stakeholders to advance the sustainable finance agenda;
4. Provide markets and products that support the scaling-up of sustainable finance and the reorientation of financial flows; and
5. Establish effective internal governance and operational processes and policies to support their sustainability efforts.

Source: SSE.

The SSE tracks stock exchanges' sustainability activities on its freely available online database (see Box I.3), which covers 93 stock exchanges worldwide.[5] The six main activities tracked by the SSE are:

- **Sustainability reporting** – Whether the exchange reports on its own sustainability (including ESG factors), either through a sustainability section on its website, a stand-alone sustainability report, or within its main annual report.
- **Sustainability reporting guidance** – Whether the exchange provides written guidance to its issuers on how to report on ESG factors. The SSE's Model Guidance provides a template for stock exchanges to do this, and a database of published guidance documents from stock exchanges can be used as examples of leading practice.
- **ESG listing rules** – Whether listed companies are required to report ESG factors.
- **Sustainability training** – Whether the exchange provides training on ESG factors.
- **ESG indexes** – Whether the exchange's market has a sustainability index, making it easier for investors to locate and invest in sustainable companies.

- **Sustainability bond listing** – Whether the exchange has a listing segment specifically for sustainability bonds, making it easier for investors to locate and invest in sustainable fixed income products.

In addition to these six main activities, exchanges are increasingly developing new and innovative initiatives to promote sustainable and transparent capital markets. For example, in 2017 the Mongolian Stock Exchange introduced a listing discount for companies supporting the SDGs.

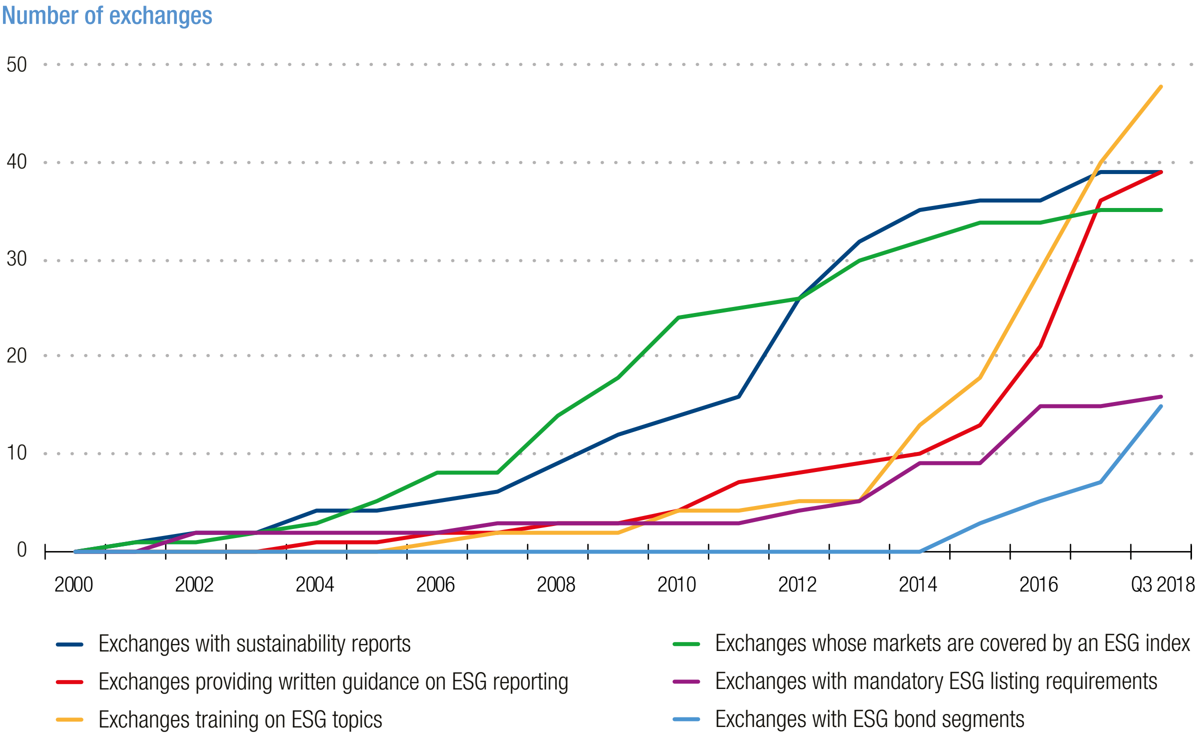
Sustainability activities at stock exchanges have increased exponentially since the beginning of the century, and more than 70% of all stock exchanges tracked by the SSE now engage in at least one of the six activities tracked (see Figure I.3).

Box I.3 **SSE launches interactive online database**

The SSE maintains a database of fact sheets on all of its Partner Exchanges, as well as members of the World Federation of Exchanges. These fact sheets are intended to inform capital market stakeholders on the work stock exchanges are undertaking to advance sustainability in their respective markets. In response to growing demand for the data compiled by the SSE on sustainability activities of stock exchanges, the SSE launched at the 2018 Global Dialogue a new online database allowing users to find all stock exchanges working on a selection of activities. By using seven filter options, users can easily identify all stock exchanges engaged on particular sustainability activities or combinations of activities. The database, which is freely accessible, can be found at www.sseinitiative.org/data.

Source: SSE.

Figure I.3 **Stock exchange sustainability activities experience strong growth**



Source: SSE database.

1. ESG DISCLOSURE: GUIDANCE AND LISTING REQUIREMENTS

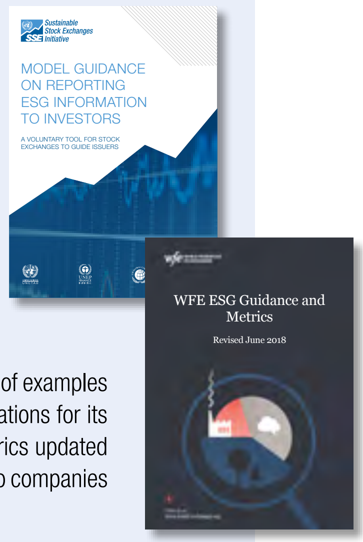
Exchanges continue to play an important role in helping companies navigate emerging ESG disclosure and management demands. By the end of the third quarter of 2018, the number of stock exchanges providing formal guidance to issuers on reporting ESG information had reached 39 (see Figure I.4). This compares with just 13 in 2015, when the SSE launched its global campaign and published a guidance document to encourage and help exchanges provide guidance on sustainability reporting (see Box I.4).

Listing rules and the role of securities regulators

In addition to voluntary guidance, ESG information is being increasingly incorporated into exchanges' listing rules , either by the exchanges themselves or by securities regulators, depending on the jurisdiction and the respective authorities of each institution. As ESG issues are incorporated into listing rules, and as the market for ESG-themed investment products grows (see following subsection), securities market regulators are taking a greater interest in this area. IOSCO's Growth and Emerging Markets committee, for example, undertook a survey of its members in early 2018 to inform discussions at the organisation

Box I.4 Showing the way: stock exchanges offer ESG disclosure guidance

SDG target 12.6 calls for UN member states to encourage companies to adopt sustainable practices and integrate sustainability information into their public reporting. In support of this target, the SSE encourages stock exchanges to provide guidance to their issuers on ESG reporting, and has provided a template that can be adapted to their local market.[16] In September 2015, when the SSE launched this Model Guidance, fewer than one-third of stock exchanges around the world were providing listed companies with guidance on reporting ESG information. This gap in guidance contributed to the publication of incomplete corporate information, creating a challenge for investors seeking a comprehensive view of a company's material ESG issues. The Model Guidance provides stock exchanges with a model, or template, to develop their own custom guidance. In the last two years, the number of stock exchanges providing such guidance has increased from 21 to 39.

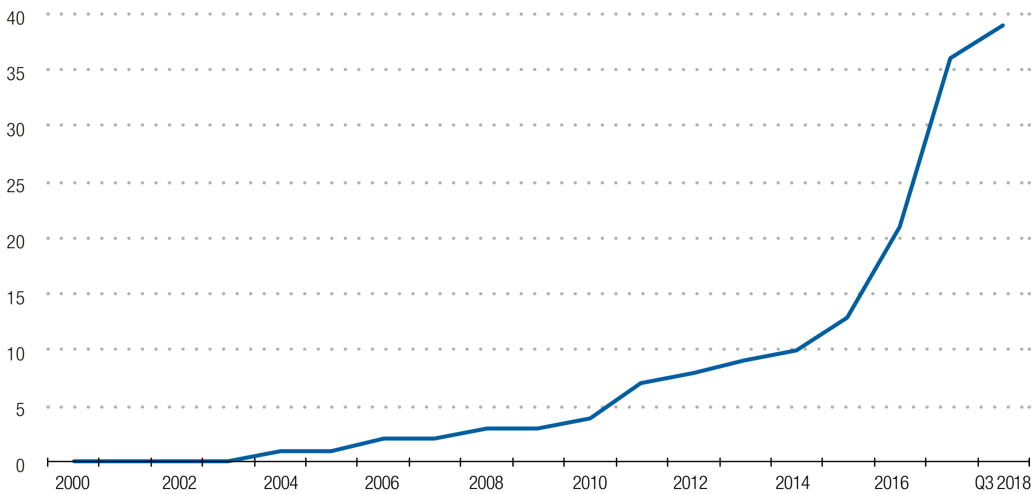


The SSE continues to engage with stock exchanges to encourage them to develop their own guidance on ESG reporting, using the Model Guidance as a starting template and referencing the growing number of examples from their peers. Based on the SSE's guidance, the WFE has created a set of metrics and recommendations for its member exchanges on how to implement their own sustainability policies.[17] The WFE Guidance & Metrics updated in June 2018, identifies material ESG metrics that exchanges can incorporate into disclosure guidance to companies listed on their market, setting out 34 key performance indicators based on the SSE guidance.

Source: SSE.

Figure I.4 ESG disclosure guidance increases

Number of stock exchanges providing written guidance on ESG disclosure for listed companies



Source: SSE database.

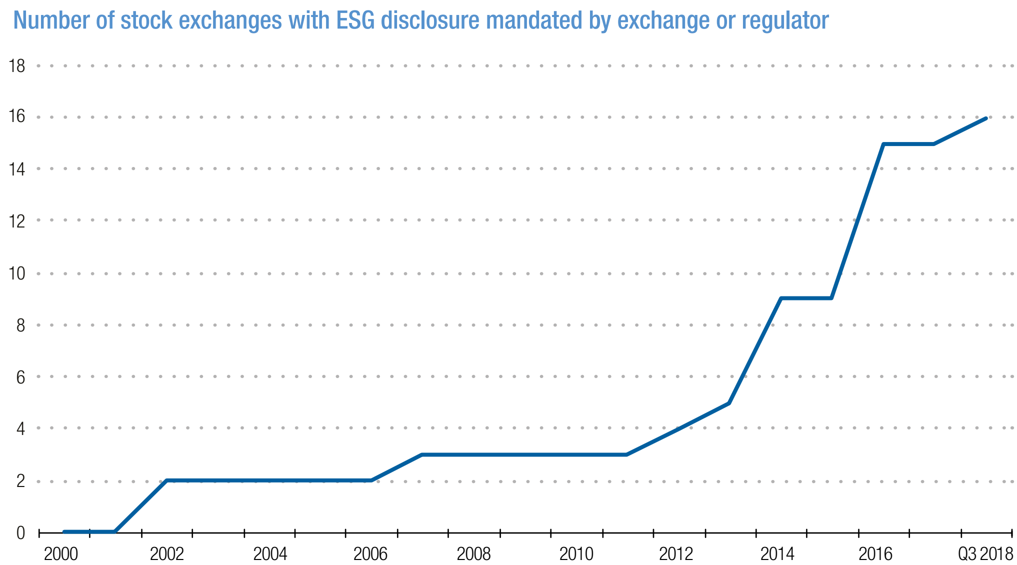
(Left to Right) Fiona Reynolds (Executive Director, PRI and Member, SSE Governing Board); Robert Scharfe (CEO, LuxSE); and Mohamed Farid (Executive Chairman, EGX) at SSE green finance session at COP23

about the role of securities regulators regarding ESG issues. In addition, the SSE initiative convened in early 2018 a securities regulators advisory group to study practices in this area and facilitate the exchange of experience.

As mandatory ESG reporting is still a relatively new sustainability mechanism, the creation of listing requirements is often combined with other activities to assist with adoption and implementation. For example, to help listed companies comply with ESG disclosure requirements in Singapore, in 2017 the Singapore Exchange organised 23 capacity-building workshops to train company staff in the production of sustainability reports. The following section further details such training.

As of the third quarter of 2018, there were 16 stock exchanges with mandatory ESG reporting requirements on four continents: eight in Asia, three in both Africa and South America, and two in Europe. Figure I.5 traces the increase in the number of exchanges that require ESG reporting by their listed companies since 2002, when Euronext France and the Johannesburg Stock Exchange adopted this practice. Throughout the 2000s, there was little progress on this front. By the time of the first SSE Global Dialogue in 2010, Borsa de Valores de Colombia was the only other stock exchange that had introduced mandatory sustainability reporting. However, the following year saw six additional exchanges follow suit.

Figure I.5 **Growing number of markets with mandatory listing requirements for ESG disclosure**



Source: SSE database.

Mandatory ESG reporting is usually introduced either at the stock exchange's initiative or through government regulation. For instance, the Namibia Stock Exchange implemented mandatory reporting as part of its NamCode, a code of principles and practices on a non-legislated basis, which entered into force in 2014. This code is influenced by South Africa's King Code of corporate governance practices, illustrating the value of sharing best practice and collaboration between markets. Another example is the regulation introduced by the Vietnamese government, effective 2016, which requires listed firms to disclose their corporate responsibility activities.

Most ESG reporting requirements are based on a "comply-or-explain" system, whereby companies have to either disclose their sustainability records or justify their decision not to do so. Some stock exchanges have put in place more comprehensive reporting rules. For instance, the Johannesburg Stock Exchange, which initially enforced what it called a "apply-or-explain" sustainability reporting regime, moved in 2017 to an "apply-and-explain" approach.

However, these initiatives are not always initiated by exchange authorities: a number of securities market regulators around the world are implementing rules to promote sustainable finance (see Box I.5).

Box I.5 How securities regulators can support the SDGs

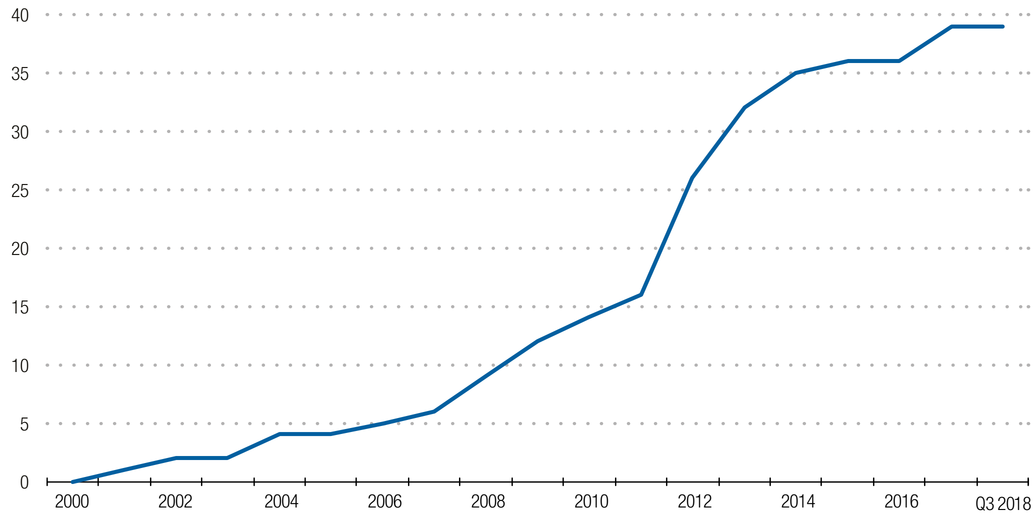
The sustainability objectives enshrined in the SDGs, as well as policy responses to these issues, can create financially material risks and opportunities for investors and may affect the resilience of the financial system as a whole. These impacts and consequences are of direct relevance to securities regulators' three overarching and interrelated objectives: to protect investors; to ensure that markets are fair, efficient and transparent; and to reduce systemic risk. To address this, the SSE, along with an advisory group of more than 70 people from key stakeholder groups, has developed a guidance document for capital market regulators sharing experience in promoting sustainable finance.

This report examines how, within their existing mandates, securities regulators could act (and are acting) on sustainability-related risks and opportunities. Based on the examples within, the report identifies five response areas and five cross-cutting actions that could help securities regulators contribute to a more stable and resilient financial system that better supports the SDGs.

Source: SSE.

Figure I.6 **Leading by example: stock exchanges reporting on their own sustainability practices**

The number of stock exchanges publishing sustainability reports



Source: SSE database.

Stock exchange sustainability reports

Stock exchanges are setting an example to their listed companies by publishing their own sustainability reports. In doing so, exchanges are illustrating how they are including ESG considerations in their own business models, ranging from staff training on diversity and equality, participation in charitable events, and inclusion in sustainability indexes. As important voices in their local markets, stock exchanges can play an important role in showcasing their own practices for market participants to follow.

As of the third quarter of 2018, there were 39 stock exchanges on five continents that report annually on their sustainability: 15 in Europe, 11 in Asia, five in both Africa and Latin America, and three in North America Figure I.6 traces the increase in the number of exchanges that disclose ESG information. In 2001, only the Stock Exchange of Thailand was providing data on sustainability. By 2010, at the time of the first SSE Global Dialogue, it had been joined by 13 others. This number has climbed to 39 over the following eight years.

Exchanges report on their sustainability in various ways. Some use internationally recognised frameworks to publish detailed stand-alone documents or extensive sections integrated into their annual reports. For instance, Bursa Malaysia has been issuing a comprehensive sustainability report, based on Global Reporting Initiative (GRI) standards, since 2011. Another example is Borsa de Valores de Colombia, which has included a GRI-based sustainability section in its annual reports since 2012. Exchanges disclose ESG information in many other formats, as part of annual reports, proxy statements or online publications.

While stock exchanges have generally focused primarily on social and corporate governance issues, exchanges have been gradually broadening their ESG reporting practices over time. For instance, the Botswana Stock Exchange began its reporting with a commitment to corporate social investment in its 2013 annual report. By 2018, the exchange had published a comprehensive report on the sustainability practices of its listed companies.

2. ESG TRAINING AND AWARENESS RAISING

Stock exchanges are increasingly playing an important capacity-building role in helping issuers and investors to better understand new ESG standards, products, services and practices. This can be done through promotional activities such as bell-ringing ceremonies or communication campaigns, or through training activities including seminars, online courses and workshops. These activities include the development of printed educational materials, workshops, larger conferences and mentorship programmes.

In addition, some exchanges are also adding training to listing requirements. For example, Oslo Børs has made ESG training mandatory for board members of listed companies as well as for management and board members of companies that have applied to list on the market. The exchange provides this training, as well as continuing courses for listed company management and advisors.

ESG training

As of 2018, at least 48 stock exchanges were providing ESG training to their listed companies, investors or other relevant stakeholders: 18 in Europe, 17 in Asia, eight in Latin America, four in Africa and one in North America. Figure I.7 illustrates the sharp increase in training activities provided by stock exchanges from 2014 onwards. One of the first programmes was launched in 2010, when Brazil's B3 stock exchange launched a partnership with the World Bank to organise seminars and other education activities to increase the participation of public and private sector actors in the carbon market. In 2014, the number of exchanges providing training on sustainability nearly tripled, from five to 13 and, over the following four years, it has increased nearly four-fold. Some stock exchanges have been included in this analysis for organising one-time specially designated events, or ESG-related sessions as a component of wider training programmes. Other exchanges stand out through consistent and well-coordinated strategies to train and raise awareness among market participants about sustainable development.

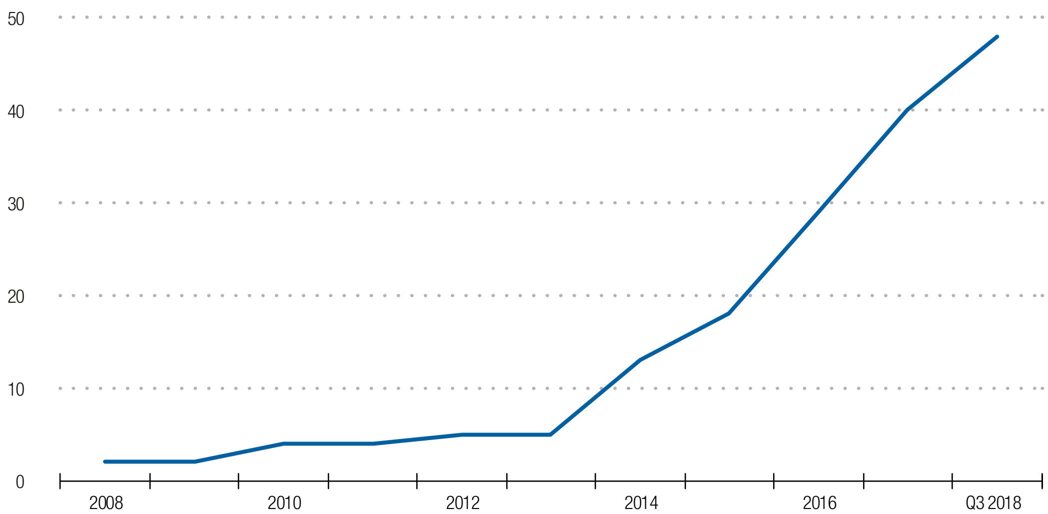
As an example of strategic ongoing training, the Stock Exchange of Thailand (SET) has carried out a series of sustainability-related workshops every year as part of its Sustainable Development Forum. These have included training on a wide range of topics, such as new sustainable investment opportunities, sustainable branding strategies, the social investment market and climate change. In addition, SET has organised free-of-charge training sessions with listed companies on, among other things, the specifics of sustainability reporting, sustainability indexing, evaluation and data management, corporate social initiatives, sustainable development risks and materiality.

Another example of strategic ongoing training is Borsa Italiana's Sustainability Day, launched in 2017 and repeated the following year with almost twice the number of attendees. This annual event brings together issuers and investors to exchange views on ESG strategies, sustainability data and reporting methods. The Johannesburg Stock Exchange holds similar investor-issuer dialogues on sustainability, called ESG Investor Briefings.

The three most common topics addressed by stock exchanges' sustainability training are reporting, green bonds, and sustainable finance.

Figure I.7 ESG training sees steady growth from 2013

The number of stock exchanges providing training on sustainability topics per year



Source: SSE database.

James Zhan, Director of Investment and Enterprise, UNCTAD and Chair, SSE Governing Board addresses WFE annual conference.

- **Training issuers on ESG reporting:** At least 29 exchanges have carried out some form of training on ESG reporting. For instance, in the run-up to the 2012 launch of its ESG reporting guide, the Hong Kong Stock Exchange conducted a series of workshops and seminars for issuers, which attracted over 1,300 participants. Since then, the exchange has continued to train issuers on ESG matters. In 2016, the exchange conducted 12 seminars, with over 1,800 attendees. Similar programmes carried out in the last 10 years include the Brazilian exchange B3's Report or Explain workshops (launched in 2012), Deutsche Borse's Sustainable Corporate Reporting workshop (2018) and the FTSE-Bursa Malaysia ESG Reporting seminars (2014-2015). In addition to its work with FTSE Russell, Bursa Malaysia conducted 63 workshops aimed at improving sustainability reporting practices in 2016, training 2,000 participants from listed companies. The reports of participants are evaluated by the exchange before and after training to determine if progress is being made. Exchanges are also using web-based solutions to increase the reach of their training activities. Following the inauguration of a voluntary programme for ESG disclosure in 2017, Nasdaq's Nordic and Baltic exchanges cooperated to produce a three-part webinar to provide assistance to listed companies across their markets in preparing their ESG disclosures.

- **Training investors on responsible investment:** Another popular training topic focuses on sustainable finance or responsible investment. At least 15 stock exchanges have organised activities that educate market participants about investment approaches that consider ESG factors and their impact. For example, in 2017 the National Stock Exchange of India worked with the European Corporate Governance Institute on a seminar on the long-term impact of institutional ownership on governance and sustainable investment. The event focused on the role that foreign institutional investors and proxy advisory firms can play in promoting corporate governance and sustainable investment in India. Another example is the panel organised in 2015 by Borsa Istanbul entitled Environmental, Social and Corporate Governance Perspective in Investments, in collaboration with the Borsa Istanbul Sustainability Platform and the Bank of New York.

- **Sustainable financial products:** Increasingly, exchanges are providing training on green or sustainable bonds. At least six stock exchanges have organised seminars, workshops or conferences to educate market participants on the subject. For instance, in 2017 the Singapore Exchange partnered with the World Bank to launch a programme to raise awareness among current and potential investors about bonds with social or environmental impact. The inaugural forum – Understanding Bond Investments and Quality Products with a Social Purpose – was held in April 2017. ESG indexes and exchange-traded funds (ETFs) are another popular subject of training sessions. For instance, Ho Chi Minh Stock Exchange a hosted a workshop in March 2017 to introduce the VN Sustainability

Index to market participants and investors. Similar workshops have been held around the world to help investors use these tools, or to advise listed companies on how they might be included in the index. For example, the Warsaw Stock Exchange held a conference in 2018 entitled Non-financial reporting – as an entrance to the RESPECT Index to increase issuer understanding of the requirements of the index.

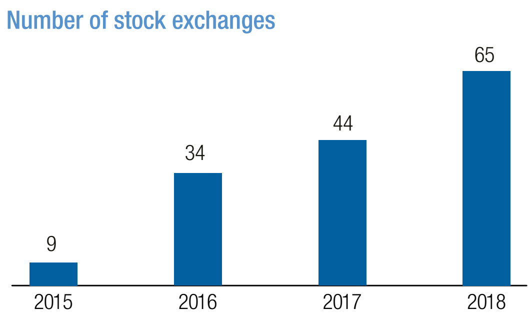
- **Gender Equality**: Gender equality training often focuses on training women to help them climb the executive ladder. In November 2016, India's National Stock Exchange organised a one-day training programme for serving and aspiring women directors of listed companies. In 2017, Peru's stock exchange, the Bolsa de Valores Lima (BVL), developed a workshop entitled "Breaking the Glass Ceiling for executives of companies listed on the BVL. It provided training on the implementation of policies aimed at promoting gender equality. The BVL has also launched a free confidential platform called Allied Group Ranking Par, which enables companies to measure gender equality with the goal that companies listed on the BVL can assess – and improve – their relative performance on this issue.

Awareness raising

Exchanges can play a number of roles in promoting or raising awareness on sustainability topics. Given their prominent voice in their local markets and their direct access to both companies and investors, stock exchanges can act as an information depository as well as disseminator of important data related to sustainability, such as market demand, new products and ESG data that can inform investment decisions and corporate behaviour.

One of the key tools in a stock exchange's toolbox is its bell-ringing ceremonies. These coveted events, often used to announce IPOs, are also being used to raise awareness of important market issues. For example, the SSE, together with partners including UN Women, the IFC, Women in ETFs, the WFE and the local networks of the UN Global Compact, has been working with exchanges to promote gender equality through bell-ringing ceremonies since 2015. Nearly 70 stock exchanges now participate in this annual event (see Figure I.8), which uses the stock exchange's voice in the market to highlight the pivotal role that the private sector can play in advancing gender equality. To bolster this, in 2017 the SSE also published guidance on the subject (see Box I.6).[6]

Figure I.8 **Stock exchange participation in the SSE Ring the Bell for Gender Equality event**



Source: SSE database.

Box I.6 **How stock exchanges can advance gender equality**

In 2017, the SSE published a report examining the state of gender equality in the private sector, with a focused analysis of stock exchange practices in 13 markets. The review found that many exchanges have already begun to take action to address gender equality, providing examples from which other exchanges can learn. Nevertheless, it found substantial room for progress. Less than a third of the exchanges interviewed tracked pay parity by gender across their own organisations, and in no market was there information on pay parity by gender available across issuers. Half of the exchanges interviewed had a listing standard related to gender, and two offered investment products that screen constituents using gender-specific metrics.

Source: SSE.

3. SUSTAINABLE FINANCE PRODUCTS

Stock exchanges have been promoting sustainable companies and projects through services such as indexes and ratings, as well as helping to channel funds towards these companies and projects through listing of thematic products such as ETFs and bonds. By supporting the development of these products or services, stock exchanges are helping investors better align their investment practices with sustainability considerations, while also rewarding companies that demonstrate strong sustainability performance.

Sustainability indexes

Sustainability indexes, whether created by the exchange itself or by a third party, track the performance of companies listed on the exchange selected using ESG metrics or sustainability themes. Such metrics and themes include GHG emissions, renewable energy, human rights, water management and gender equality.

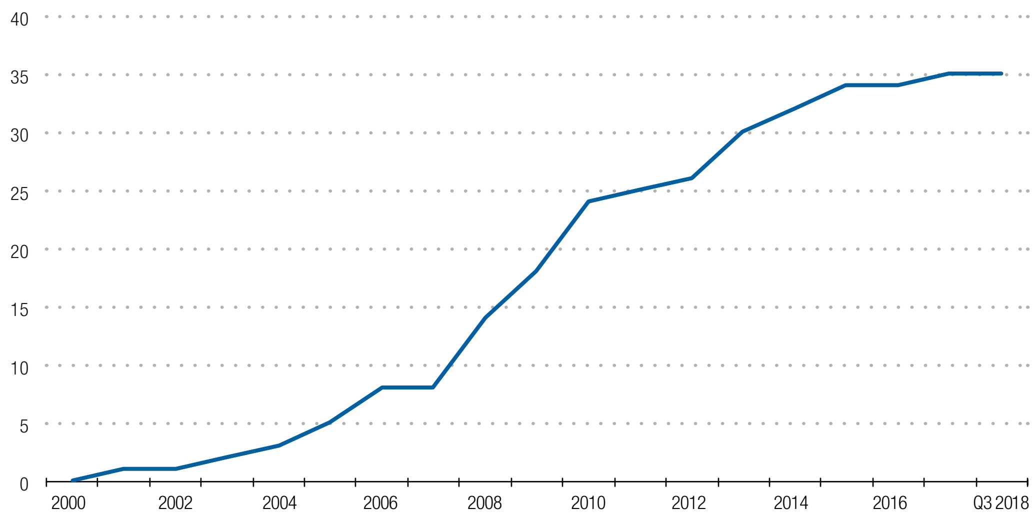
Sustainability indexes were among the first activities supporting sustainable capital markets. The first country-specific sustainability indexes were launched by the London Stock Exchange in 2001: the FTSE4Good UK Index and the FTSE4 Good UK 50 Index are still calculated today. As of the third quarter of 2018, 35 stock exchanges offered sustainability indexes (covering either social or environmental factors or ESG themes) on five continents: 12 in both Asia and Europe, eight in the Americas and three in Africa (see Figure I.9).

While in some instances exchanges have been the instigators in the creation of such indexes, several specialist companies, such as FTSE-Russell, Standard & Poor's, Dow Jones, Stoxx, Thomson Reuters and MSCI, are also active in developing sustainability indexes, and often work with exchanges to develop them. These indexes are often licensed to large asset managers that create specific products, such as ETFs, that are used by both institutional and retail investors. ESG indexes can help asset managers who seek to incorporate material sustainability issues into their asset allocation strategies. ESG indexes are also encouraging greater voluntary transparency among listed companies. Some of the earliest indexes are now over a decade old, providing a source of historical data for comparing the performance of sustainable companies against more conventional market indexes. The MSCI KLD 400 Social Index, for example, has outperformed its main benchmark, the S&P500, in four of the past five years (figure I.10).

A growing number of investors believe that ESG factors will increasingly affect investment performance, especially over the longer term. For example, environmental issues are increasingly affecting equity markets, with portfolio investors beginning to incorporate climate risk and other environmental risks and opportunities into their analyses and asset

Figure I.9 **More than one third of the world's markets have a sustainability index**

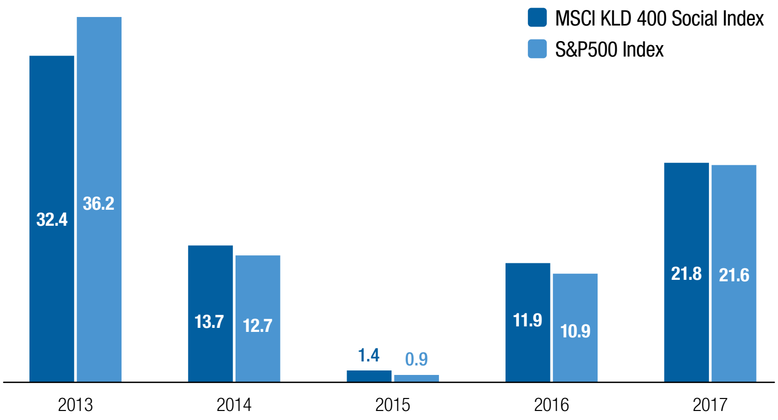
Number of stock exchanges whose listed companies are covered by a sustainability index



Source: SSE database.

Figure I.10 United States ESG index versus a traditional broad market index

Calendar year returns, 2013-2107 (per cent)



Source: UNCTAD (2018) World Investment Report, based on data from MSCI and S&P.

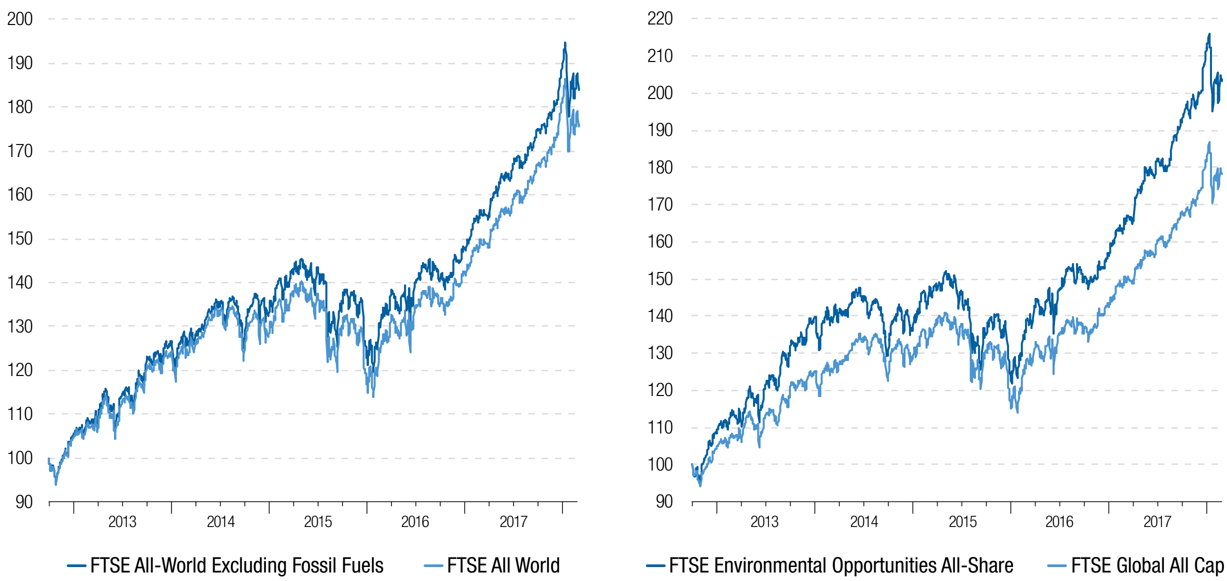
allocations. Global efforts to combat climate change, in line with the outcomes of the UN Paris Agreement and the SDGs, have some major asset owners concerned about the medium- to long-term viability of fossil fuel companies. This is leading some portfolio investors to exclude such companies from their portfolios. This investor behaviour is giving rise to a new class of environmentally-themed equity indexes, and the performance of these indexes against their conventional benchmarks gives an indication of the growing materiality of sustainability issues (see Figure I.11).

Sustainability bond listing segments

Green bonds comprise an increasing proportion of the fixed-income market, with their proceeds used to finance clean and efficient energy, pollution mitigation, agriculture and forestry, sustainable water and other projects. Although green bond listings represent only about 0.2% of the overall bond market, the number and value of such listings have increased exponentially, with triple-digit year-on-year growth rates over the past five years (see Figure I.12). The absolute value of the green bond market exceeded US$163bn at

Figure I.11 Green equity indexes' performance versus their conventional benchmarks, Q3 2012–17

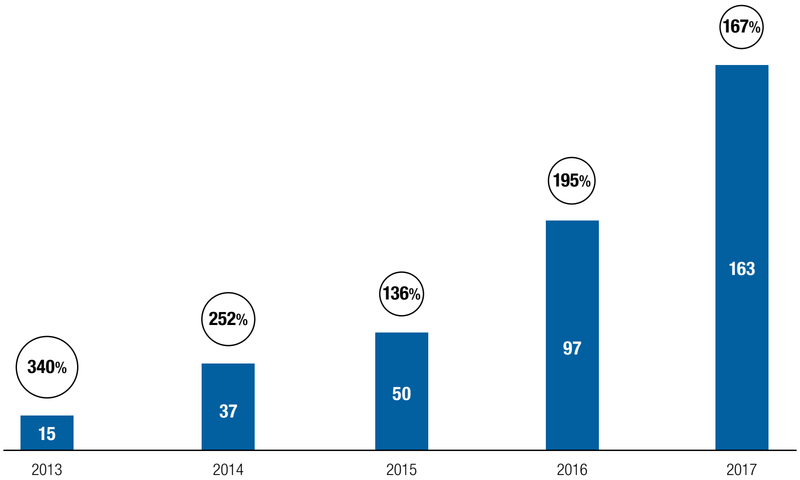
(100= 10/2012)



Source: UNCTAD (2018) World Investment Report, based on data from FTSE-Russell.

Figure I.12 **Total green bond issuance 2013–17**

Billions of dollars and per cent



Source: UNCTAD (2018) World Investment Report.

the end of 2017. Just under half of all green bonds are listed on stock exchanges, with 15 exchanges in the SSE database offering a specific category for sustainability bond listings as of late 2018. In addition to listing such bonds, stock exchanges are playing an important role in promoting standards for their assurance and providing guidance to issuers, while opening new channels of finance for climate mitigation and adaptation projects.

The experience of the green bond market is also leading to innovations with other sustainability-themed bonds, such as water bonds (a subcategory of green bonds used to finance clean and sustainable water supplies) and gender bonds (which provide funding for companies with strong gender equality performance). Growing investor demand for sustainability-themed bonds has led the International Capital Market Association to issue new guidelines – the Social Bond Principles – in 2018.[7] The Women's Livelihood Bond, listed on the Singapore Exchange in August 2017, and QBE Insurance Gender Equality Bond, launched in Australia in 2017 are two examples of gender-themed bonds. In another indication of growing investor interest, the IFC has merged its Banking on Women programme into a broader social bond programme in an effort to expand the investor base it is targeting.

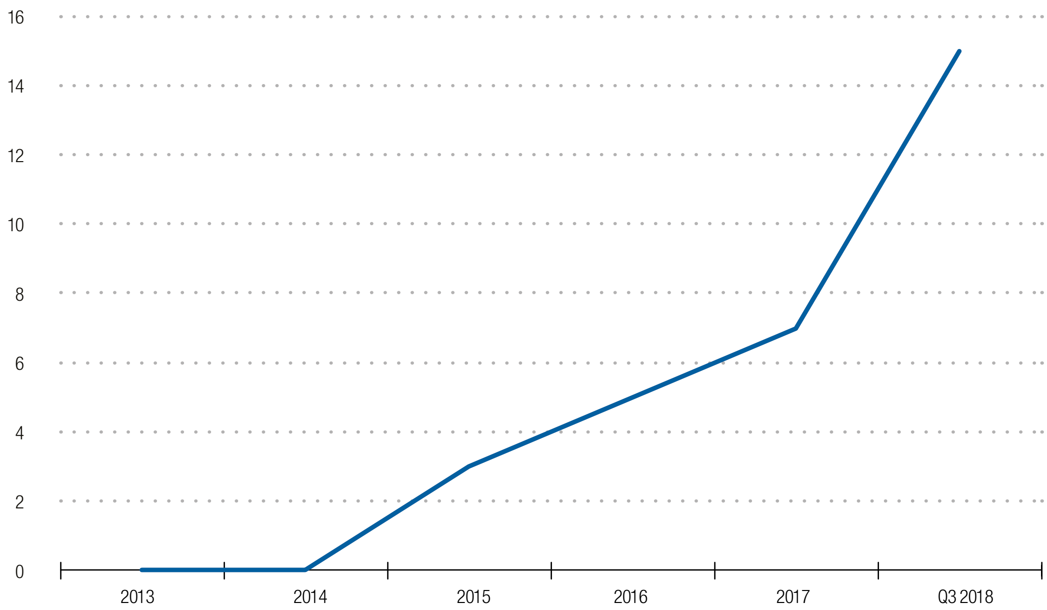
Meanwhile, bonds are being issued linked to the SDGs. During the UN General Assembly gathering in September 2018, the UN Global Compact and UNEP FI released a roadmap to encourage such issuance.[8] The paper called on institutional investors to increase their allocation of capital towards the SDGs, and to drive demand for a diverse set of SDG investments ranging from sovereign bonds to corporate bonds and equity, particularly in emerging markets.

Meeting of the SSE Green Finance Advisory Group in Geneva, 2017.

In addition to a growing number of exchanges listing sustainability bonds, 15 exchanges in the SSE database, across four continents, have a specific segment for sustainability bond listings: 10 from Europe, four from Latin America and one from Africa (see Figure I.13). The Oslo Børs, the London Stock Exchange and Nasdaq Stockholm launched the first such listing segments, in 2015. The adoption rate since has been promising. In 2018 alone, eight exchanges introduced sustainability bond listings. By creating a listing segment specifically for these products, stock exchanges can make it easier for investors to find fixed income products aligned with their ESG interests. As a relatively new activity at stock exchanges, there is considerable room for growth in this area, and exchanges around the world are stepping up to transition towards more sustainable financial markets. This and other activities aimed to grow green finance are discussed in the SSE's 2017 publication *How stock exchanges can grow green finance* (see Box I.7).

Figure I.13 Sharp growth in green bond and sustainability bond listing segments

Number of stock exchanges with listing segments for sustainability bonds



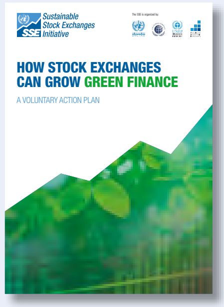
Source: SSE database.

Isabelle Durant, Deputy Secretary General of UNCTAD addresses exchanges at COP23.

Box I.7 Green finance

Promoting green products and 'greening' the mainstream financial markets are critical ways that stock exchanges and other capital market stakeholders can contribute to meeting global goals to combat climate change. To help stock exchanges begin or enhance their work on green finance, the SSE released a guidance document at the UN Climate Summit (COP23) in November 2017, providing an action plan.[18] Developed by a multi-stakeholder advisory group of more than 70 experts from more than 60 institutions across 28 countries and six international organisationsthis document summarises efforts already underway, identifies specific items of relevance for stock exchanges, and highlights key areas of impact.

The SSE green finance action plan identifies two main action areas on which stock exchanges should work on in parallel. First, the promotion of green-labelled products and services helps direct funding towards green projects and environmentally-aligned issuers. Second, more systematic and holistic changes must take place to support a green transition and ensure market resilience to the economic impacts of climate change.



In addition to these two main action areas, the guidance also identifies two crosscutting areas that will facilitate green finance efforts: strengthening the quality and availability of climate-related and other environmental disclosure among issuers and investors; and contributing to the growth of dialogue and consensus building on green finance with other capital market participants. Throughout all four of these action areas, partnerships are key.

To help stock exchanges assess their current state of play on green finance, and to develop their own roadmaps, SSE developed a diagnostic checklist (see table below). The SSE Green Finance Diagnostic Checklist allows exchanges to benchmark their current support for green capital markets and better visualise the opportunities presented.

SSE Green Finance Diagnostic Checklist

Action plan area		Action point
Promote green products and services	**1.1**	**Product offerings and partnerships**: Has your exchange developed and offered green products or services for your market or partnered with another financial services institution to do so?
	1.2	**Visibility**: Does your stock exchange make green products easy to find through dedicated platforms or listing labels?
	1.3	**Green terminology**: Does your exchange provide guidance to its market on green terminology?
Greening financial markets	**2.1**	**Market education**: Does your exchange educate issuers and investors on the importance of incorporating environmental issues into investment practices?
	2.2	**Standards**: Has your exchange incorporated environmental disclosure standards into its listing rules?
	2.3	**Benchmarking**: Does your exchange make benchmarks available for your market in the form of green indices or environmental rating systems?
Strengthen environmental disclosure	**3.1**	**Written guidance**: Does your exchange provide written guidance on environmental disclosure?
	3.2	**Training**: Is your exchange providing training for capital market participants on environmental disclosure and/or integration?
	3.3	**Leading by example**: Does your exchange produce a report on its own environmental policies, practices and impacts?
Grow green dialogue	**4.1**	**Green financial centres**: Does your exchange have an action plan or roadmap to grow green finance in your market?
	4.2	**Standards and policy dialogues**: Does your exchange stimulate policy dialogue on green standards?
	4.3	**Investor–issuer dialogue**: Does your exchange facilitate a dialogue between issuers and investors on green finance?

Source: SSE (2017) How stock exchanges can grow green finance.

4. CONCLUDING REMARKS

The last two years have seen a significant growth in activity among stock exchanges promoting sustainability and transparency in their markets. As of the third quarter of 2018, 78 exchanges had committed to promoting sustainable and transparent markets by joining the SSE, and 66 stock exchanges were engaged with at least one of the six sustainability activities tracked by the initiative. In particular, the number of green or sustainability bond listing segments had tripled from five in 2016 to 15 in late 2018, expanding rapidly in line with the exponential growth in the green bond market itself. There was also rapid growth in the provision by exchanges of guidance for and education of market participants: the number of exchanges providing written guidance on ESG disclosure grew threefold from 2015 to 2018, bolstered by the SSE's campaign and Model Guidance on this topic. More broadly, sustainability education through training also spiked in recent years, increasing 65% in the last two. A full overview of stock exchange's sustainability activities can be found in Annex 1.

The continued growth in stock exchange engagement with sustainability indicates a market demand for more information on sustainability and a growing understanding of the material risks that can be understood through analysis of what had previously been seen as non-financial information. The launch of the TCFD, the European Commission's HLEG and the WFE's sustainability principles all speak to the urgency with which the entire investment chain needs to respond to pressing issues such as climate change, resource scarcity and short-termism.

II. MEASURING SUSTAINABILITY DISCLOSURE

1. RANKING THE WORLD'S STOCK EXCHANGES

What follows is a ranking of the world's major stock exchanges, based on an evaluation of the sustainability disclosure of their listed companies. The sample of companies used includes the more than 4,300 companies of the FTSE ESG research universe that are constituents of the FTSE All-World Index and which generate revenues of at least US$1bn, according to their most recent annual filing. Based on these criteria, 35 stock exchanges were eligible for inclusion in the ranking.

This evaluation of corporate sustainability disclosure was based on seven quantitative indicators of corporate ESG performance: GHG emissions; water use; energy use; occupational safety; waste; temporary staff; and employee turnover. The stock exchanges were scored in three categories: disclosure (how many of the seven indicators were reported by their listed companies); growth (in ESG disclosure among issuers compared with previous years); and timeliness (how quickly the data was published by issuers relative to the reporting period). The results of the ranking are shown in Table II.1, with stock exchanges listed in order of disclosure score. A detailed methodology is provided in Annex 3.

Disclosure performance

Nasdaq Helsinki tops the ranking by disclosure performance, with strong reporting rates among its large listed entities. The Finnish firms did especially well in terms of GHG disclosure, with 13 out of 14 companies having reported their GHG emissions data for 2016. All of the 10 Finnish companies evaluated were found to disclose water usage data for 2016. Similarly solid disclosures were made in energy, waste and in the percentage of contractors or temporary staff. The rest of the top five exchanges by disclosure score are: Euronext Paris, BME Spanish Stock Exchanges, Deutsche Börse and Euronext Amsterdam.

European exchanges dominate the ranking by disclosure score; eight of the top 10 exchanges are European, with Borsa Italiana, Oslo Børs and SIX Swiss Exchange joining the top five. This result may be influenced by the implementation of the EU's Transparency Directive.

The top 10 also includes two exchanges from emerging markets: the Stock Exchange of Thailand (SET) and the Johannesburg Stock Exchange (JSE) are respectively at seventh and eighth in the ranking by disclosure score. SET-listed companies were noted for strong disclosure rates for water, safety and GHG emissions. The existence of policy instruments in Thailand to strengthen ESG disclosure may have helped this performance; in particular, the voluntary reporting guidelines issued by the stock exchange in 2012 and mandatory disclosure requirements introduced by the securities regulator in 2014.[9] JSE-listed companies also showed solid disclosure on GHG emissions and water, which may in part be due to the JSE listing requirements implementing the successive King recommendations.[10]

Disclosure growth performance

The Hong Kong Stock Exchange achieved the best disclosure growth score in the ranking. This score assesses the growth in disclosure of the seven indicators between the 2015 and 2016 reporting periods. For the 2016 reporting period, 66 of the exchange's 245 listed companies disclosed GHG information, up from 45 in 2015, a 46% year-on-year increase, with a comparable improvement on energy disclosure. Bursa Malaysia, the Australian Securities Exchange, the Santiago Stock Exchange and Deutsche Börse take the following four places in the disclosure growth ranking.

Four exchanges from emerging economies were among the top 10 ranked by disclosure growth score; five exchanges in this list were from Asia-Pacific countries. These results indicate that sustainability disclosure is picking up fast in areas outside developed Europe, which has historically been the leader in terms of corporate sustainability reporting.

Disclosure timeliness performance

The disclosure timeliness score measures how quickly an exchange's large listings report sustainability data to the market after the end of their fiscal year. This is assessed by looking at the availability of data for any one of the seven indicators for 2017 among companies with fiscal year-ends between July 2017 and December 2017.[11]

Table II.1 **Ranking the world's stock exchanges based on ESG disclosure of issuers**

Score (%) and rank (number)

Stock Exchange	Disclosure		Growth		Timeliness	
Nasdaq Helsinki	96.7%	1	40.9%	18	0.0%	32
Euronext Paris	86.7%	2	29.9%	28	57.1%	16
BME Spanish Stock Exchanges	82.8%	3	14.5%	33	74.2%	10
Deutsche Börse	77.3%	4	66.1%	5	68.5%	12
Euronext Amsterdam	74.8%	5	46.2%	15	82.8%	7
Borsa Italiana	73.2%	6	60.6%	8	51.4%	17
Stock Exchange of Thailand	73.1%	7	36.6%	23	65.7%	13
Johannesburg Stock Exchange	72.4%	8	37.2%	22	94.2%	3
Oslo Børs	71.1%	9	32.4%	26	91.4%	4
SIX Swiss Exchange	67.5%	10	29.7%	29	77.1%	9
Australian Securities Exchange	62.6%	11	76.9%	3	97.1%	2
Euronext Brussels	62.5%	12	63.1%	7	40.0%	20
Santiago Stock Exchange	60.0%	13	66.6%	4	0.0%	30
London Stock Exchange	58.0%	14	40.7%	20	80.0%	8
Nasdaq Stockholm	54.9%	15	10.3%	34	88.5%	5
Moscow Exchange	54.1%	16	59.3%	10	20.0%	27
B3	54.0%	17	48.8%	13	25.7%	25
Tokyo Stock Exchange	52.8%	18	63.7%	6	85.7%	6
Bolsa de Valores de Colombia	48.2%	19	23.2%	32	45.7%	18
Korea Exchange	46.6%	20	27.5%	30	22.8%	26
Nasdaq Copenhagen	44.6%	21	2.0%	35	100.0%	1
Toronto Stock Exchange	44.1%	22	40.8%	19	42.8%	19
Borsa Istanbul	43.7%	23	35.7%	24	0.0%	33
Singapore Exchange	39.7%	24	45.7%	16	60.0%	15
Bursa Malaysia	33.7%	25	82.3%	2	71.4%	11
Mexican Stock Exchange	30.6%	26	25.1%	31	37.1%	21
Tel Aviv Stock Exchange	27.5%	27	53.6%	12	28.5%	23
Bombay Stock Exchange/National Stock Exchange	25.9%	28	58.5%	11	n/a	n/a
Warsaw Stock Exchange	25.0%	29	32.7%	25	28.5%	24
New York Stock Exchange	23.4%	30	44.2%	17	17.1%	28
Indonesia Stock Exchange	22.1%	31	38.1%	21	62.8%	14
Hong Kong Stock Exchange	12.2%	32	84.9%	1	34.2%	22
Nasdaq	10.7%	33	47.7%	14	14.2%	29
Philippine Stock Exchange	10.6%	34	60.4%	9	0.0%	31
Shanghai Stock Exchange	0.6%	35	31.9%	27	0.0%	34

Source: UNCTAD and Corporate Knights, based on FTSE-Russell data.

Companies trading on Nasdaq Copenhagen were found to be the fastest reporters of corporate sustainability information, with 10 of its 17 qualifying companies having already published their 2017 sustainability performance information by the end of June 2018. They are followed by the companies listed on the Australian Securities Exchange, the Johannesburg Stock Exchange, Oslo Børs and Nasdaq Stockholm.

2. ADDITIONAL ANALYSIS: INDICATOR, SECTOR, SIZE AND LOCATION[12]

Indicator analysis

Of the seven indicators tracked in this analysis, GHG emissions (scope 1 & 2) was the most frequently reported indicator for 2016 (see Figure II.1). This indicator was reported by 48% of the 4,344 companies included in this research. Among only large firms (above US$1bn in revenues) GHG emissions data was reported by over 50% of firms (see location and size analysis below). Among large stock exchanges (those with at least 100 listed companies with over $1 billion in sales) the London Stock Exchange (LSE) had the highest disclosure rate for GHG emissions with a near-perfect 97% disclosure rate for its listed companies (113 companies out of 117). The strong display of performance on GHG disclosure at the LSE is almost certainly a result of mandatory requirements: the 2013 update to the United Kingdom Companies Act of 2006 requires companies incorporated in the United Kingdom and listed on the LSE main market, a European Economic Area market, Nasdaq or the New York Stock Exchange to report their GHG emissions.[13]

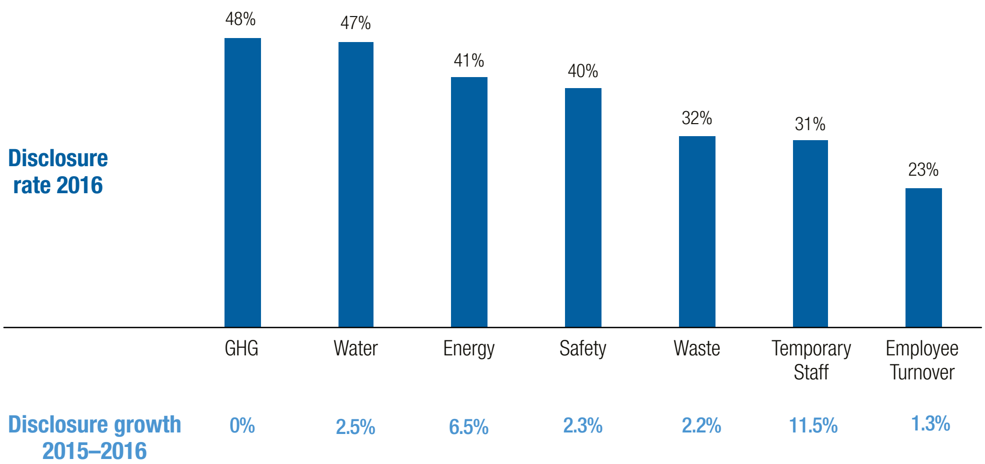
Apart from GHG emissions, there was growth in disclosure of the remaining six indicators between 2015 and 2016, although at a low pace in most cases. It should be noted, however, that the disclosure of energy use rose by 6.5% and the disclosure of temporary staff usage grew at 11.5%, the highest among the seven indicators.

Sector analysis of GHG emissions disclosure

Despite the progress made over the past two decades in sustainability reporting, more than half of the 4,344 companies included in this study still did not disclose their GHG emissions for 2016. Analysis by sector shows that only five of 11 sectors analysed had more than 50% of their companies disclosing GHG emissions (see Figure II.2). Year 2016 disclosure rates for industrials, energy, materials, utilities and telecoms ranged from 51% in the case of industrials to 66% for telecoms. In light of the Paris Agreement, it is particularly significant that 48% of companies in the energy sector provided no data on their GHG emissions.

Figure II.1 **Corporate disclosure rates and growth rates for specific sustainability indicators**

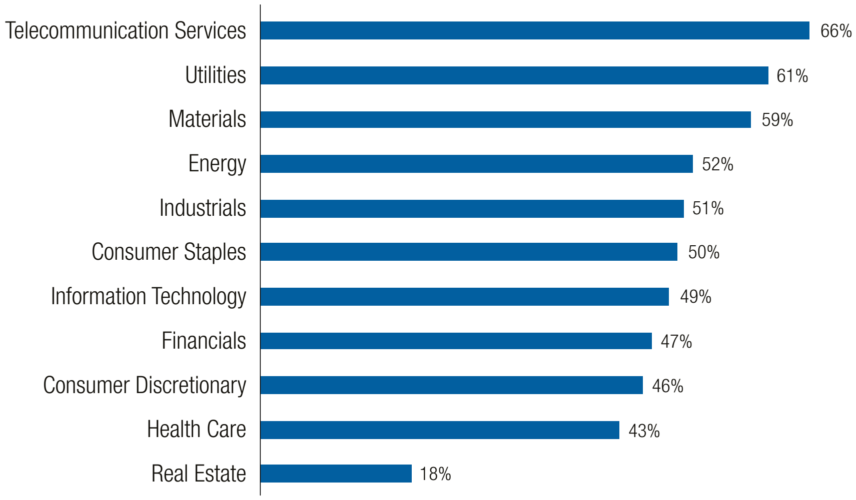
Percentage of companies disclosing the indicator for year 2016 and disclosure growth rate 2015–2016
Average of all companies in research universe, both large and small firms



Source: UNCTAD and Corporate Knights, based on FTSE-Russell data

Figure II.2 **Disclosure of GHG emissions by industrial sector**

GICS[14] sector and year 2016 disclosure rate (% of companies)



Source: UNCTAD and Corporate Knights, based on FTSE-Russell data.

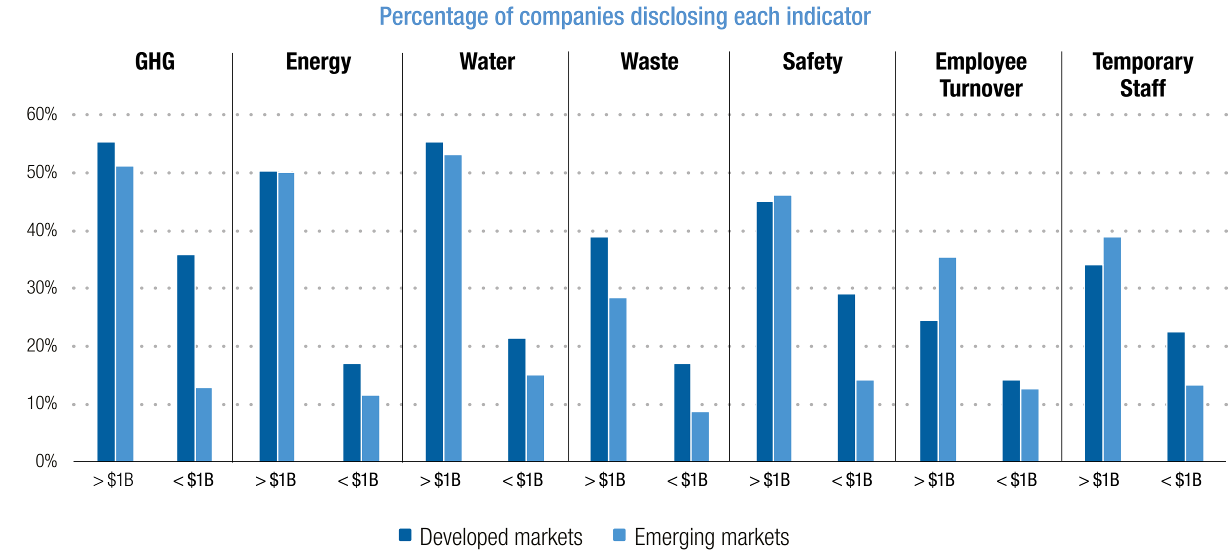
Location and size analysis

Figure II.3 presents an analysis of disclosure rates among the seven sustainability indicators broken down by company size (using as a threshold revenues greater or less than US$1bn) and location of headquarters (based in a developed or emerging market).[15] A number of observations can be made from this analysis:

- Company size is the most significant determining factor in disclosure rates. Large companies (with revenue greater than US$1bn) disclose more than small companies, and large companies generally have comparable disclosure rates regardless of whether they are located in developed or emerging markets. This is the case in particular for reporting on GHG, energy, water and safety, but some exceptions exist (see next bullet point).
- Large companies in emerging markets have a significantly higher rate of disclosure for employee turnover compared with large companies in developed markets, while the opposite is true for reporting on waste.
- Disclosure rates by smaller companies were consistently lower across all seven indicators in comparison with their larger counterparts. This relationship also holds regardless of whether they are based in a developed or emerging economy, although the difference is more pronounced in the latter.

Investor consultations: Steve Waygood (Chief Responsible Investment Officer, Aviva Investors) speaks with James Zhan (Director, Investment and Enterprise, UNCTAD and Chair, SSE Governing Board) during meeting at London Stock Exchange

Figure II.3 **Disclosure rates by level of development of home country and size of company**



Source: UNCTAD and Corporate Knights, based on FTSE-Russell data.

3. CONCLUDING REMARKS

This analysis, of more than 4,300 companies listed on 35 stock exchanges, provides a snapshot of disclosure practices for seven sustainability-related indicators. The results find comparatively good disclosure practices at a number of exchanges, with Nasdaq Helsinki topping the ranking for overall disclosure rates, the Hong Kong Stock Exchange for growth in disclosure, and Nasdaq Copenhagen for timeliness of disclosure. While Europe has often been seen as the leader in sustainability reporting, this analysis indicates that sustainability disclosure is picking up in areas outside of Europe: with two emerging markets (Johannesburg Stock Exchange and Stock Exchange of Thailand) in the top 10 for overall disclosure rates and four of the top 10 by disclosure growth rate were from emerging markets.

A common thread among many of the top exchanges for disclosure, and particularly for GHG disclosure, is the presence of regulation regarding one or more indicator evaluated. In all of the top 10 exchanges, in both developed and emerging markets, some form of regulation mandates disclosure of one or more of the indicators evaluated from all, or a portion of, listed companies. GHG disclosure was the most reported indicator, which also may be related to regulatory action in certain jurisdictions such as France's Grenelle II Law and the United Kingdom's 2013 update to the UK Companies Act. These two pieces of regulation have elements that make them particularly effective: they are mandatory, specific in terms of which disclosures are required, and they are applicable to a majority of listed companies in their respective jurisdictions.

While high growth in disclosure rates has been seen in a number of markets, this analysis highlights that much more is still needed. Despite the Paris Agreement, no growth was seen in GHG disclosure between the 2015 and 2016 reporting periods, and more than half of the companies evaluated provide no data on GHG emissions.

Stock exchanges and regulators alike can encourage and promote greater disclosure on this and other indicators through various means, depending on their market circumstances, as discussed in Part I of this report. The SSE works with capital market participants to further enhance disclosure and contribute to the growth of sustainable and transparent capital markets that align with the UN SDGs.

ANNEX 1: STOCK EXCHANGES' SUSTAINABILITY ACTIVITIES

Country	Stock Exchange	SSE Partner Exchange	Has report on sustainability	Requires ESG reporting from listed companies	Offers written guidance on ESG reporting	Offers ESG related training	Has sustainability related indices	Has sustainability bond listing category
Argentina	Bolsas y Mercados Argentinos	•				•		
Australia	Australian Securities Exchange	•			•			
Australia	Sydney Stock Exchange	•						
Bahrain	Bahrain Bourse							
Bangladesh	Chittagong Stock Exchange	•				•		
Bangladesh	Dhaka Stock Exchange	•				•		
Belarus	Belarusian Currency and Stock Exchange	•						
Belgium	Euronext Brussels	•						
Bermuda	Bermuda Stock Exchange							
Bosnia and Herzegovina	Banja Luka Stock Exchange	•						
Botswana	Botswana Stock Exchange	•	•					
Brazil	B3	•	•	•	•	•	•	
Canada	Aequitas NEO Exchange	•						
Canada	TMX Group (Toronto Stock Exchange)				•		•	
Chile	Bolsa de Comercio de Santiago	•	•		•	•	•	•
China	Shanghai Stock Exchange	•	•		•	•	•	
China	Shenzhen Stock Exchange	•			•	•	•	
China, SAR Hong Kong	Hong Kong Exchanges	•	•	•	•	•	•	
Colombia	Bolsa de Valores de Colombia	•	•	•		•	•	•
Costa Rica	Bolsa Nacional de Valores	•	•			•		•
Cyprus	Cyprus Stock Exchange							
Denmark	Nasdaq Copenhagen	•	•		•	•	•	
Egypt	Egyptian Exchange	•	•		•	•	•	
Estonia	Nasdaq Tallinn	•	•		•	•		•
Finland	Nasdaq Helsinki	•	•		•	•	•	•
France	Euronext Paris	•		•			•	
Germany	Deutsche Börse AG	•	•		•	•	•	

Country	Stock Exchange	SSE Partner Exchange	Has report on sustainability	Requires ESG reporting from listed companies	Offers written guidance on ESG reporting	Offers ESG related training	Has sustainability related indices	Has sustainability bond listing category
Greece	Athens Exchange Group	•	•			•		
Iceland	Nasdaq Iceland	•	•		•	•		
India	Bombay Stock Exchange	•	•	•	•	•	•	
India	National Stock Exchange of India	•	•	•	•	•	•	
Indonesia	Indonesia Stock Exchange						•	
Ireland	Euronext Dublin							
Israel	Tel-Aviv Stock Exchange						•	
Italy	Borsa Italiana	•	•		•	•		•
Jamaica	Jamaica Stock Exchange	•				•		
Japan	Japan Exchange Group, Inc.	•	•			•	•	
Jordan	Amman Stock Exchange	•			•			
Kazakhstan	Kazakhstan Stock Exchange	•			•			
Kenya	Nairobi Securities Exchange	•	•					
Korea	Korea Exchange	•					•	
Kuwait	Boursa Kuwait	•			•	•		
Latvia	Nasdaq Riga	•	•		•	•		•
Lithuania	Nasdaq Vilnius	•	•		•	•		•
Luxembourg	Luxembourg Stock Exchange	•		•	•	•	•	•
Malaysia	Bursa Malaysia	•	•	•	•	•	•	
Malta	Malta Stock Exchange							
Mauritius	Stock Exchange of Mauritius	•					•	
Mexico	Bolsa Mexicana de Valores	•	•		•	•	•	•
Mongolia	Mongol Securities Exchange	•						
Mongolia	Mongolian Stock Exchange	•						
Morocco	Bourse de Casablanca	•			•			
Namibia	Namibia Stock Exchange	•		•				
New Zealand	New Zealand Stock Exchange	•			•			
Nigeria	Nigerian Stock Exchange	•	•			•		
Norway	Oslo Børs	•	•		•	•		•
Oman	Muscat Securities Market							
Panama	Bolsa de Valores de Panamá	•						
Peru	Bolsa de Valores de Lima	•	•	•	•	•	•	
Philippines	Philippine Stock Exchange		•			•		
Poland	Warsaw Stock Exchange	•				•	•	

Country	Stock Exchange	SSE Partner Exchange	Has report on sustainability	Requires ESG reporting from listed companies	Offers written guidance on ESG reporting	Offers ESG related training	Has sustainability related indices	Has sustainability bond listing category
Portugal	Euronext Lisbon	•						
Qatar	Qatar Stock Exchange	•			•	•		
Romania	Bucharest Stock Exchange	•						
Russian Federation	Moscow Exchange							
Rwanda	Rwanda Stock Exchange	•						
Saudi Arabia	Saudi Stock Exchange (Tadawul)							
Serbia	Belgrade Stock Exchange	•				•		
Seychelles	Trop-X	•		•				
Singapore	Singapore Exchange	•	•	•	•	•	•	
Slovenia	Ljubljana Stock Exchange (LJSE)	•						•
South Africa	Johannesburg Stock Exchange	•	•	•	•	•	•	•
Spain	Bolsas y Mercados Españoles	•	•		•	•	•	
Sri Lanka	Colombo Stock Exchange	•			•			
Sweden	Nasdaq Stockholm	•	•		•	•	•	•
Switzerland	SIX Swiss Exchange		•				•	
Tanzania	Dar es Salaam Stock Exchange	•				•		
Thailand	Stock Exchange of Thailand	•	•	•	•	•		
The Netherlands	Euronext Amsterdam	•				•		
Tunisia	Tunis Stock Exchange	•						
Turkey	Borsa Istanbul	•	•		•	•	•	
UAE	Abu Dhabi Securities Exchange							
UAE	Dubai Financial Market	•	•			•		
Uganda	Uganda Securities Exchange	•						
UK	Euronext London	•					•	
UK	London Stock Exchange	•	•		•	•	•	•
USA	Nasdaq	•	•				•	
USA	New York Stock Exchange	•	•			•	•	
Vietnam	Hanoi Stock Exchange	•		•	•	•		
Vietnam	Ho Chi Minh Stock Exchange	•	•	•	•	•	•	
Western Africa	BRVM (Regional Securities Exchange)	•						
Zimbabwe	Zimbabwe Stock Exchange	•						

Source: SSE database.

ANNEX 2: DISCLOSURE RATES (2015–17) AND GROWTH RATE (2015 TO 2016)

Disclosure rates presented below are for all the companies included in the FTSE ESG research universe that are part of the FTSE All-World Index and generate at least $1bn of revenues, as of their most recent annual filing.

Disclosure rates and growth rate ranked by 2017 disclosure rates (per cent)

Stock Exchange	2015	2016	2017	Growth 2015–2016
Employee Turnover				
Nasdaq Copenhagen	64.70	23.50	52.90	-41.20
Johannesburg Stock Exchange	61.10	53.70	38.90	-7.40
Australian Securities Exchange	42.30	39.70	34.60	-2.60
Euronext Amsterdam	59.10	31.80	27.30	-27.30
NasdaqStockholm	58.10	35.50	22.60	-22.60
BME Spanish Stock Exchanges	81.50	48.10	22.20	-33.30
Tokyo Stock Exchange	14.40	18.00	19.40	3.60
Singapore Exchange	46.40	39.30	17.90	-7.10
SIX Swiss Exchange	56.10	51.20	17.10	-4.90
London Stock Exchange	33.60	38.80	15.50	5.20
Bombay Stock Exchange/National Stock Exchange	22.10	17.70	15.00	-4.40
Euronext Paris	74.70	69.60	11.40	-5.10
Deutsche Börse	69.40	59.70	11.30	-9.70
Stock Exchange of Thailand	62.10	34.50	10.30	-27.60
Bolsa Colombia	40.00	30.00	10.00	-10.00
Oslo Stock Exchange	30.00	20.00	10.00	-10.00
Euronext Brussels	75.00	58.30	8.30	-16.70
Borsa Italiana	58.10	74.20	6.50	16.10
Bursa Malaysia	20.60	32.40	5.90	11.80
Indonesia Stock Exchange	37.50	41.70	4.20	4.20
Nasdaq	8.60	11.80	2.60	3.30
Hong Kong Stock Exchange	16.70	27.30	2.40	10.60
B3	58.30	64.60	2.10	6.30
New York Stock Exchange	15.40	11.60	1.40	-3.80
Borsa Istanbul	34.50	34.50	0.00	0.00
Korea Exchange	43.90	34.70	0.00	-9.20
Mexican Stock Exchange	37.50	31.30	0.00	-6.30

Stock Exchange	2015	2016	2017	Growth 2015–2016
Moscow Exchange	63.00	66.70	0.00	3.70
NasdaqHelsinki	78.60	78.60	0.00	0.00
Philippine Stock Exchange	18.20	18.20	0.00	0.00
Santiago Stock Exchange	52.60	68.40	0.00	15.80
Shanghai Stock Exchange	0.00	0.00	0.00	0.00
Tel Aviv Stock Exchange	5.30	15.80	0.00	10.50
Toronto Stock Exchange	35.70	35.70	0.00	0.00
Warsaw Stock Exchange	18.20	22.70	0.00	4.50
Energy				
Tokyo Stock Exchange	55.90	58.30	47.50	2.50
Nasdaq Copenhagen	76.50	76.50	47.10	0.00
Oslo Stock Exchange	90.00	90.00	40.00	0.00
Australian Securities Exchange	60.30	65.40	37.20	5.10
Johannesburg Stock Exchange	76.40	78.20	32.70	1.80
London Stock Exchange	74.40	76.10	32.50	1.70
Euronext Amsterdam	78.30	82.60	30.40	4.30
Bombay Stock Exchange/National Stock Exchange	40.70	46.00	30.10	5.30
NasdaqStockholm	77.40	77.40	22.60	0.00
BME Spanish Stock Exchanges	88.90	88.90	22.20	0.00
SIX Swiss Exchange	78.00	78.00	17.10	0.00
Deutsche Börse	68.30	74.60	14.30	6.30
Singapore Exchange	53.60	60.70	14.30	7.10
Euronext Paris	91.30	91.30	11.30	0.00
Stock Exchange of Thailand	65.50	65.50	10.30	0.00
Mexican Stock Exchange	50.00	53.10	6.30	3.10
Bursa Malaysia	35.30	38.20	5.90	2.90
Toronto Stock Exchange	58.90	64.30	5.40	5.40
Nasdaq	35.50	40.10	5.30	4.60
Hong Kong Stock Exchange	19.20	28.20	4.90	9.00
B3	60.40	64.60	4.20	4.20
New York Stock Exchange	48.80	51.70	4.20	2.80
Borsa Italiana	71.00	74.20	3.20	3.20
Bolsa Colombia	70.00	70.00	0.00	0.00
Borsa Istanbul	58.60	62.10	0.00	3.40
Euronext Brussels	58.30	66.70	0.00	8.30
Indonesia Stock Exchange	20.80	25.00	0.00	4.20
Korea Exchange	68.70	70.70	0.00	2.00

Stock Exchange	2015	2016	2017	Growth 2015–2016
Moscow Exchange	63.00	70.40	0.00	7.40
NasdaqHelsinki	85.70	85.70	0.00	0.00
Philippine Stock Exchange	22.70	27.30	0.00	4.50
Santiago Stock Exchange	52.60	52.60	0.00	0.00
Shanghai Stock Exchange	9.10	9.10	0.00	0.00
Tel Aviv Stock Exchange	42.10	47.40	0.00	5.30
Warsaw Stock Exchange	27.30	31.80	0.00	4.50
Safety				
Australian Securities Exchange	86.00	88.00	62.00	2.00
Johannesburg Stock Exchange	52.30	52.30	36.40	0.00
London Stock Exchange	61.80	63.10	28.30	1.30
Bombay Stock Exchange/National Stock Exchange	39.20	35.40	26.60	-3.80
Euronext Amsterdam	91.70	100.00	25.00	8.30
Stock Exchange of Thailand	72.70	77.30	22.70	4.50
Deutsche Börse	70.50	72.70	20.50	2.30
Singapore Exchange	44.00	44.00	20.00	0.00
Tokyo Stock Exchange	25.90	25.70	19.50	-0.20
SIX Swiss Exchange	66.70	66.70	19.00	0.00
Euronext Paris	76.20	73.80	16.70	-2.40
Warsaw Stock Exchange	66.70	66.70	16.70	0.00
Indonesia Stock Exchange	47.40	47.40	15.80	0.00
BME Spanish Stock Exchanges	62.50	65.60	15.60	3.10
Borsa Italiana	70.00	70.00	10.00	0.00
NasdaqStockholm	57.10	52.40	9.50	-4.80
Bursa Malaysia	12.30	14.20	7.80	2.00
B3	41.70	38.90	5.60	-2.80
Toronto Stock Exchange	56.80	62.20	5.40	5.40
Hong Kong Stock Exchange	19.60	28.00	4.80	8.50
New York Stock Exchange	39.90	38.90	2.20	-1.00
Borsa Istanbul	30.00	20.00	0.00	-10.00
Korea Exchange	18.60	15.70	0.00	-2.90
Mexican Stock Exchange	33.30	33.30	0.00	0.00
Moscow Exchange	62.50	66.70	0.00	4.20
Nasdaq	16.40	16.40	0.00	0.00
Philippine Stock Exchange	21.10	26.30	0.00	5.30
Santiago Stock Exchange	69.20	84.60	0.00	15.40
Shanghai Stock Exchange	7.70	7.70	0.00	0.00

Stock Exchange	2015	2016	2017	Growth 2015–2016
Tel Aviv Stock Exchange	23.50	29.40	0.00	5.90
Bolsa Colombia	n/a	n/a	n/a	n/a
Euronext Brussels	n/a	n/a	n/a	n/a
Nasdaq Copenhagen	n/a	n/a	n/a	n/a
NasdaqHelsinki	n/a	n/a	n/a	n/a
Oslo Stock Exchange	n/a	n/a	n/a	n/a
GHG				
Johannesburg Stock Exchange	92.70	90.90	49.10	-1.80
Tokyo Stock Exchange	53.60	57.70	48.00	4.10
Nasdaq Copenhagen	88.20	76.50	47.10	-11.80
Australian Securities Exchange	64.10	69.20	46.20	5.10
London Stock Exchange	95.70	96.60	43.60	0.90
Oslo Stock Exchange	90.00	100.00	40.00	10.00
Bombay Stock Exchange/National Stock Exchange	43.40	46.90	31.90	3.50
Euronext Amsterdam	91.30	87.00	30.40	-4.30
BME Spanish Stock Exchanges	100.00	100.00	25.90	0.00
NasdaqStockholm	83.90	77.40	25.80	-6.50
SIX Swiss Exchange	82.90	80.50	17.10	-2.40
Deutsche Börse	77.80	77.80	15.90	0.00
Singapore Exchange	53.60	53.60	14.30	0.00
Bursa Malaysia	47.10	50.00	11.80	2.90
Stock Exchange of Thailand	72.40	72.40	10.30	0.00
Euronext Paris	93.80	90.00	10.00	-3.80
Mexican Stock Exchange	62.50	56.30	6.30	-6.30
Hong Kong Stock Exchange	18.40	26.90	5.70	8.60
Nasdaq	48.00	43.40	5.30	-4.60
B3	79.20	68.80	4.20	-10.40
New York Stock Exchange	63.00	56.10	4.00	-6.80
Moscow Exchange	48.10	44.40	3.70	-3.70
Toronto Stock Exchange	78.60	73.20	3.60	-5.40
Borsa Italiana	71.00	74.20	3.20	3.20
Korea Exchange	70.70	62.60	2.00	-8.10
Bolsa Colombia	70.00	70.00	0.00	0.00
Borsa Istanbul	65.50	58.60	0.00	-6.90
Euronext Brussels	66.70	66.70	0.00	0.00
Indonesia Stock Exchange	20.80	16.70	0.00	-4.20
NasdaqHelsinki	92.90	92.90	0.00	0.00

Stock Exchange	2015	2016	2017	Growth 2015–2016
Philippine Stock Exchange	27.30	36.40	0.00	9.10
Santiago Stock Exchange	42.10	57.90	0.00	15.80
Shanghai Stock Exchange	0.00	0.00	0.00	0.00
Tel Aviv Stock Exchange	47.40	47.40	0.00	0.00
Warsaw Stock Exchange	31.80	31.80	0.00	0.00
Percentage of contractors or temporary staff				
Bombay Stock Exchange/National Stock Exchange	54.00	63.70	66.40	9.70
Tokyo Stock Exchange	59.50	71.20	48.20	11.70
Australian Securities Exchange	37.20	44.90	37.20	7.70
Johannesburg Stock Exchange	44.40	44.40	37.00	0.00
Euronext Amsterdam	50.00	40.90	22.70	-9.10
Oslo Stock Exchange	20.00	10.00	20.00	-10.00
Singapore Exchange	32.10	32.10	17.90	0.00
Nasdaq Copenhagen	23.50	11.80	17.60	-11.80
NasdaqStockholm	41.90	25.80	16.10	-16.10
BME Spanish Stock Exchanges	74.10	55.60	14.80	-18.50
SIX Swiss Exchange	29.30	31.70	12.20	2.40
Bursa Malaysia	17.60	20.60	11.80	2.90
Deutsche Börse	41.90	45.20	9.70	3.20
Euronext Brussels	33.30	50.00	8.30	16.70
London Stock Exchange	19.80	18.10	7.80	-1.70
Stock Exchange of Thailand	44.80	51.70	6.90	6.90
Borsa Italiana	71.00	74.20	6.50	3.20
Euronext Paris	68.40	63.30	6.30	-5.10
Tel Aviv Stock Exchange	36.80	31.60	5.30	-5.30
Indonesia Stock Exchange	45.80	37.50	4.20	-8.30
Mexican Stock Exchange	21.90	21.90	3.10	0.00
Hong Kong Stock Exchange	11.00	13.50	2.90	2.40
Nasdaq	5.30	3.90	2.60	-1.30
B3	33.30	37.50	2.10	4.20
Korea Exchange	88.80	94.90	2.00	6.10
Toronto Stock Exchange	26.80	25.00	1.80	-1.80
New York Stock Exchange	7.30	7.60	0.50	0.20
Bolsa Colombia	50.00	50.00	0.00	0.00
Borsa Istanbul	44.80	34.50	0.00	-10.30
Moscow Exchange	18.50	25.90	0.00	7.40
NasdaqHelsinki	78.60	92.90	0.00	14.30

Stock Exchange	2015	2016	2017	Growth 2015–2016
Philippine Stock Exchange	4.50	9.10	0.00	4.50
Santiago Stock Exchange	52.60	57.90	0.00	5.30
Shanghai Stock Exchange	0.00	0.00	0.00	0.00
Warsaw Stock Exchange	40.90	22.70	0.00	-18.20
Waste				
Tokyo Stock Exchange	67.00	67.60	53.60	0.60
Australian Securities Exchange	44.70	51.10	34.00	6.40
BME Spanish Stock Exchanges	64.30	57.10	28.60	-7.10
Johannesburg Stock Exchange	38.70	45.20	25.80	6.50
London Stock Exchange	40.00	37.10	21.40	-2.90
Deutsche Börse	61.90	69.00	19.00	7.10
Euronext Amsterdam	54.50	63.60	18.20	9.10
Stock Exchange of Thailand	66.70	72.20	16.70	5.60
Singapore Exchange	34.80	39.10	13.00	4.30
SIX Swiss Exchange	62.50	62.50	12.50	0.00
Bombay Stock Exchange/National Stock Exchange	11.80	10.30	11.80	-1.50
NasdaqStockholm	47.40	47.40	10.50	0.00
Euronext Paris	66.70	66.70	10.40	0.00
Bursa Malaysia	30.00	40.00	10.00	10.00
Borsa Italiana	52.40	57.10	9.50	4.80
Mexican Stock Exchange	38.50	34.60	7.70	-3.80
B3	41.90	48.40	6.50	6.50
Hong Kong Stock Exchange	9.30	11.50	2.70	2.20
New York Stock Exchange	28.80	30.00	2.30	1.20
Borsa Istanbul	42.90	52.40	0.00	9.50
Indonesia Stock Exchange	0.00	0.00	0.00	0.00
Korea Exchange	41.80	38.80	0.00	-3.00
Moscow Exchange	27.30	27.30	0.00	0.00
Nasdaq	13.90	11.10	0.00	-2.80
NasdaqHelsinki	90.00	90.00	0.00	0.00
Philippine Stock Exchange	23.50	23.50	0.00	0.00
Santiago Stock Exchange	23.10	15.40	0.00	-7.70
Shanghai Stock Exchange	9.10	9.10	0.00	0.00
Tel Aviv Stock Exchange	40.00	40.00	0.00	0.00
Toronto Stock Exchange	18.20	12.10	0.00	-6.10
Warsaw Stock Exchange	38.50	30.80	0.00	-7.70
Bolsa Colombia	n/a	n/a	n/a	n/a
Euronext Brussels	n/a	n/a	n/a	n/a

Stock Exchange	2015	2016	2017	Growth 2015–2016
Nasdaq Copenhagen	n/a	n/a	n/a	n/a
Oslo Stock Exchange	n/a	n/a	n/a	n/a
Water				
Johannesburg Stock Exchange	88.60	85.70	62.90	-2.90
Nasdaq Copenhagen	90.00	90.00	60.00	0.00
Tokyo Stock Exchange	63.40	64.80	51.20	1.40
Australian Securities Exchange	54.50	61.40	40.90	6.80
Bombay Stock Exchange/National Stock Exchange	36.60	40.20	29.30	3.70
SIX Swiss Exchange	65.20	60.90	26.10	-4.30
Euronext Amsterdam	75.00	75.00	25.00	0.00
Euronext Paris	83.70	86.00	18.60	2.30
Deutsche Börse	69.20	74.40	17.90	5.10
Singapore Exchange	44.40	44.40	16.70	0.00
Stock Exchange of Thailand	83.30	83.30	16.70	0.00
London Stock Exchange	39.70	39.70	14.70	0.00
Indonesia Stock Exchange	17.60	11.80	11.80	-5.90
Borsa Italiana	72.20	72.20	11.10	0.00
NasdaqStockholm	63.20	57.90	10.50	-5.30
B3	70.40	74.10	7.40	3.70
BME Spanish Stock Exchanges	63.00	63.00	7.40	0.00
Bursa Malaysia	11.30	14.10	7.30	2.80
Mexican Stock Exchange	59.10	50.00	4.50	-9.10
Hong Kong Stock Exchange	21.80	34.50	4.20	12.70
Nasdaq	22.90	21.90	3.80	-1.00
New York Stock Exchange	36.70	36.50	1.40	-0.30
Borsa Istanbul	68.80	62.50	0.00	-6.30
Korea Exchange	41.70	38.90	0.00	-2.80
Moscow Exchange	71.40	71.40	0.00	0.00
NasdaqHelsinki	100.00	100.00	0.00	0.00
Philippine Stock Exchange	37.50	31.30	0.00	-6.30
Santiago Stock Exchange	60.00	70.00	0.00	10.00
Shanghai Stock Exchange	10.00	10.00	0.00	0.00
Tel Aviv Stock Exchange	38.50	38.50	0.00	0.00
Toronto Stock Exchange	61.80	55.90	0.00	-5.90
Warsaw Stock Exchange	41.70	33.30	0.00	-8.30
Bolsa Colombia	n/a	n/a	n/a	n/a
Euronext Brussels	n/a	n/a	n/a	n/a
Oslo Stock Exchange	n/a	n/a	n/a	n/a

Source: Corporate Knights, based on FTSE Russell data.

ANNEX 3. DETAILED RANKING METHODOLOGY

Below is the detailed methodology for ranking exchanges, based on the ESG reporting of their listed enterprises.

Aspect	Explanation
Unit of analysis	All companies included in the FTSE ESG research universe that are part of the FTSE All-World Index and which reported revenues of at least $1bn in their most recent annual filing. All other companies are excluded from analysis in this ranking.
Level of aggregation	The research universe is aggregated according to the stock exchanges where their shares are publicly traded.[19] Stock exchanges with fewer than 10 companies were removed from this analysis in order to maintain statistical significance. A total of 35 stock exchanges remained after applying the above filter.
Data source	The data used in the analysis was obtained from FTSE Russell in July 2018. FTSE Russell ESG data is used for the following reasons: • The database consists of ESG research that covers more than 90-95% of global investable market capitalisation; • FTSE Russell has complete ESG indicator coverage, supported by a research model that includes all global frameworks (GRI, Sustainability Accounting Standards Board, etc.) and emerging topics; • FTSE Russell's ESG data model is supported by a precise and objective research methodology. This methodology is overseen by an external committee comprising experts from the investment community, business, civil society, trade unions and academia; and • The FTSE Russell data research methodology includes a subsector-specific approach whereby companies in a given subsector are researched only for indicators with potential for material impact. This permits a more targeted assessment of disclosure performance of aspects among sectors where impacts are most significant. The seven indicators consist of: 1. Energy use (energy – ECC15) 2. Carbon emissions (GHG – ECC14) 3. Water use (water – EWT11) 4. Waste generation (waste – EPR25 and waste recycled - EPR26) 5. Rate of injuries and fatalities (safety – SHS15 and SHS38) 6. Rate of employee turnover (employee turnover – SLS24) 7. Percentage of contractors or temporary staff (temporary staff – SLS25) Due to FTSE Russell's sector-specific research approach, the universe of companies for a given indicator may differ to the universe for another indicator. The table below lays out the number of companies from the research universe that are included for each of the seven indicators.

Number of companies in the research universe, per indicator

GHG	Energy	Water	Waste	Safety	Employee turnover	Temporary staff
2,638	2,638	2,284	1,678	1,495	2,631	2,631

Historical data

The disclosure score is based on data for the year 2016. Companies' fiscal year-ends vary, and many companies still take over 12 months after their fiscal year-end to disclose their sustainability data. As of August 2018, the year 2016 was the most recent time period for which the majority of companies engaged in sustainability reporting have disclosed.

Disclosure score

This measures the proportion of large companies trading on a given stock exchange that disclosed the seven indicators for 2016. For each of the indicators, the percentage of large companies that disclosed the indicator for 2016 is determined. These percentages are then percentile-rank-scored, with the highest percentage receiving the highest score. A stock exchange's disclosure score is an average of the disclosure rate percentile-rank scores for each of the seven indicators. The indicators are equally weighted in terms of their contribution to the disclosure score.

Disclosure growth score

This measures the growth rate in the proportion of large listings that disclosed the seven indicators over the 2015–16 period. For each of the indicators, the difference in percentage disclosure is calculated for the period 2015–16. The resulting growth rates for each indicator are percentile-rank-scored, with the highest growth percentage receiving the highest score. A stock exchange's disclosure growth score is an average of the growth rate percentile-rank for each of the seven indicators.

Disclosure timeliness score

The disclosure timeliness score measures how quickly companies report sustainability data to the market after the end of their fiscal year. The study considered companies that had a fiscal year-end from 1 July 2017 to 31 December 2017. If a given stock exchange had fewer than 10 companies remaining after applying the above screen, it was discarded from the analysis in order to maintain statistical significance; for each of the remaining exchanges, the study looked at the existence of the disclosure of any one of the seven indicators for the year 2017, as per FTSE Russell ESG research data. The percentage of companies that disclosed at least one of the seven indicators was calculated. A stock exchange's disclosure timeliness score is an average of the percentage of companies that disclosed at least one of the seven indicators within the specific time frame. These percentages are then percentile-rank-scored, with the highest percentage receiving the highest score. In the event the disclosure timeliness score cannot be calculated for a given stock exchange, the data will be listed as not available.

Source: Corporate Knights.

ENDNOTES

1 TCFD (2017), Recommendations of the Task Force on Climate-related Financial Disclosures.

2 European Commission (2018) Final report of the High-Level Expert Group on Sustainable Finance.

3 UN (2015), Transforming our World: The 2030 Agenda for Sustainable Development. General Assembly Resolution A/RES/70/1, 25 September 2015. See Annex 1 for the 17 SDGs. The SSE has published a policy brief discussing the role that stock exchanges can play in supporting the SDGs. See SSE initiative (2015), Sustainable Development Goals: What do they mean for stock exchanges?

4 UN (2015), The Paris Agreement. See also the United Nation Framework Convention on Climate Change website, United Nations (2018), The Paris Agreement. Website.

5 www.sseinitiative.org/data

6 SSE (2017), How stock exchanges can advance gender equality

7 ICMA (2018), The Social Bond Principles

8 UN Global Compact (2018) SDG Bonds & Corporate Finance: A Roadmap to Mainstream Investments

9 KPMG International, GRI, UNEP and The Centre for Corporate Governance in Africa (2016), Carrots & Sticks, Sustainability Reporting Instruments Worldwide

10 JSE (June 22, 2017), "JSE amends listing requirements to include disclosure on the promotion of racial diversity at board level". Press release.

11 To maintain statistical significance, stock exchanges with fewer than 10 qualifying companies to complete the timeliness study were not assessed.

12 Based on FTSE Russell ESG data. Analysis by Corporate Knights. Universe of companies consists of: (1) The FTSE All-World Index, a market capitalisation-weighted index representing the performance of the large and mid-cap stocks from the FTSE Global Equity Index Series, and which covers 90-95% of the investable market capitalisation. The index covers developed and emerging markets and is used as the basis for investment products, such as funds, derivatives and exchange-traded funds. The FTSE Global Equity Index Series and (2) the FTSE All-Share® Index represents the performance of all eligible companies listed on the London Stock Exchange's main market, which pass screening for size and liquidity. The index captures 98% of the UK's market capitalisation. FTSE Russell's ESG research model and ratings cover more than 4,300 companies (including the FTSE All-World). The key benefits of FTSE Russell ESG research methodology are: (a) aligned with all main ESG disclosure frameworks: GRI (Global Reporting Initiative), SASB (Sustainability Accounting Standards Board), TCFD (Task Force on Climate-related Financial Disclosure), etc., (b) objective and strong governance: an independent external committee oversees the methodology, (c) rules-based: clear rules to assess companies excluding any subjectivity coming from the analysts researching the data and (d) materiality oriented – sectoral exposure approach.

13 UK Department for Environment (2013), "Environmental Reporting Guidelines: including mandatory greenhouse gas emissions reporting guidance".

14 The Global Industry Classification Standard (GICS) is an industry taxonomy developed in 1999 by MSCI and Standard & Poor's for use by the global financial community.

15 Based on classification used by the IMF in its World Economic Outlook reports

16 For more information see www.SSEinitiative.org/esg-guidance

17 World Federation of Exchanges (2018) WFE ESG Guidance and Metrics, Revised June 2018

18 SSE (2017), "How Stock Exchanges Can Grow Green Finance".

19 Companies were aggregated on the basis of their "primary listing." For example, Rio Tinto Ltd. trades on the Australian Securities Exchange (primary exchange) and on the New York Stock Exchange as an ADR. In our study, Rio Tinto Ltd. is grouped under the Australian Securities Exchange only.

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