

## ANNEX 3. DETAILED RANKING METHODOLOGY

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

Aspect	Explanation
<b>Unit of analysis</b>	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.
<b>Level of aggregation</b>	The research universe is aggregated according to the stock exchanges where their shares are publicly traded. <sup>19</sup> 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.
<b>Data source</b>	<p>The data used in the analysis was obtained from FTSE Russell in July 2018. FTSE Russell ESG data is used for the following reasons:</p> <ul style="list-style-type: none"> <li>• The database consists of ESG research that covers more than 90-95% of global investable market capitalisation;</li> <li>• 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;</li> <li>• 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</li> <li>• 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.</li> </ul>

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.