



## The 2023 Global 100: Overview of Corporate Knights Rating Methodology

Corporate **Knights**

[WWW.GLOBAL100.ORG](http://WWW.GLOBAL100.ORG)

# Global 100 Fast Facts

## Overview

- **Annual ranking** of corporate sustainability performance.
- **Released each January** and covered by leading media outlets.

## Eligibility

- **Size:** publicly-listed companies with gross revenue of a minimum of \$PPP-currency \$1B (RY 2021\*).
- **Corporate Knights Peer Group (CKPG) and geography:** All industries and geographies are automatically considered before screening out companies from certain industries or with identified egregious practices.

\* RY 2021: Any fiscal year end between July 1st, 2021 and June 30th, 2022.

## Approach

- Ranking is based primarily on **publicly-disclosed data** (e.g., financial filings, sustainability reports, company websites).
- Submissions or payment from companies is **not** required.
- Companies included in the Global 100 Universe **are contacted for data verification** prior to project completion.
- Methodology is based on up to **25 key performance indicators** (KPIs) covering resource management, employee management, financial management, sustainable revenue & sustainable investment and supplier performance.

## Contact info and to learn more

- Email [research@corporateknights.com](mailto:research@corporateknights.com) if you would like to confirm the correct contacts for your organization.
- [Sign up for email updates](#) on future rankings and research from Corporate Knights and the Global 100.
- Visit [www.global100.org](http://www.global100.org) for more details.

# Ranking is conducted by Corporate Knights, a specialized media and investment research firm

Corporate Knights is a Toronto-based B Corp that operates in three segments:

## **Corporate Knights Magazine**

- World's largest circulating magazine focused on advancing a sustainable economy.
- Reaches 443,250 of the world's most influential business and political decision-makers.

## **Corporate Knights Research**

- Corporate Knights' rankings and ratings currently serve as an input to identify potential investment candidates for investors representing \$15 trillion in assets under management.

## **Council for Clean Capitalism**

- CEO-supported group catalyzing smart and efficient public policy.
- Engages with leading public policy-makers.

# Principles of the Global 100

- **Relevance:** The ranking is meant to be representative of business sustainability in the current socio-economic context.
- **Transparency:** The precise methodology of the ranking and the results of the process are fully disclosed.
- **Objectivity:** Companies are assessed primarily using quantitative data and performance indicators.
- **Public data:** Ranking relies primarily on data-points that are part of the public domain.\*
- **Comparability:** Companies are compared against their *Corporate Knights Peer Group*\*\* (CKPG) peers.\*\*\*
- **Engagement:** Companies eligible for the ranking are informed prior to the ranking, so as to have an opportunity to ensure the necessary data is made available.
- **Stakeholders:** Stakeholder feedback is actively solicited throughout the project.

*\*Private data may be used in certain circumstances, provided the company confirms its validity to Corporate Knights.*

*\*\*There are 64 CKPGs.*

*\*\*\* The four diversity metrics are an exception. These are compared to the whole universe of eligible companies.*

# Global 100 Methodology Updates

**1. KPI weights:** KPIs from the following list whose weight are less than 2.5%\* for any given CKPG are eliminated and their weights are redistributed proportionally to the remaining variable weight KPIs:

- Water Productivity
- Waste Productivity
- VOC Productivity, NOX Productivity, SOX Productivity and Particulate Matter Productivity
- Injuries, fatalities
- Employee Turnover

*\* Exceptions were made for KPIs in a number of CKPGs whose weights are under 2.5% due to the impact being relevant according to CK Research. In such cases, the KPI remains applicable despite a weight of less than 2.5%.*

**2. Sustainability Pay Link:** Companies will now be scored as follows:

- 0% - No pay link
- 1% - Indicates existence of a CEO pay link but does not state the % of total variable pay
- Up to an additional 4%, where a company indicates the existence of a CEO pay link **AND** discloses:
  - A. The monetary amount earned by the CEO that is tied to the pay link, and;
  - B. The CEO's total variable compensation (short-term and long-term)
- The resulting percentage (A/B) is percent-ranked against that of all the other companies in the starting universe, then multiplied by 4%.

*\*See KPIs and Weighting Scheme on slide 21*

# Global 100 Methodology Updates

**3. New KPI: Political Influence (bonus of up to 3%).** This KPI tracks whether or not, directly or through its agent(s):

- The company's climate policy and lobbying activities with policymakers are aligned with the Paris Agreement (Yes = 1%)
- The company has a system in place to monitor, report and take corrective action on any misalignment between the goals of the Paris Agreement and the climate change lobbying activities of trade/industry associations, coalitions and alliances of which the company is a member, its major suppliers and/or thinktanks funded by the company on at least a biennial basis (Yes = 1%)
- The company discloses all trade/industry association memberships, including Board leadership positions and climate-related committee memberships, with a commitment to make that list public by end of 2023 (Yes = 1%)

**4. Water Productivity:** The calculation for this KPI will change to **PPP\$ Revenue/Water consumed** (where Water consumed is water withdrawal – water discharged) for the following CKPGs:

- Power Generation
- Power transmission and distribution

For all other CKPGs, the Water Productivity KPI remains unchanged: **PPP\$ Revenue/Water withdrawn**

# Global 100 Methodology Updates

**5. Waste Productivity:** The calculation of this KPI is changed for the following CKPGs only:

Changed to: **PPP\$ Revenue/(Waste generated – waste recycled – waste rock – tailings):**

- Metal and coal mining
- Non-metallic mining
- Oil and gas production

Changed to: **PPP\$ Revenue/(Waste generated – waste recycled – tailings):**

- Smelters and steel making

**6. Terminology change:** “CK Clean Economy Taxonomy” terminology has been updated to “Sustainable Economy Taxonomy.”

**7. CK Sustainable Taxonomy:** Introduction of the Corporate Knights Revenue Adjustment Factor  
The "Corporate Knights Revenue Adjustment Factor" seeks to scale the company's total revenue by factoring in the extent to which its cash flow from operations are appropriated by shareholders and senior executives (through dividends, share buybacks and compensation to senior executives) as opposed to being ploughed back into company. This adjustment is applied to industries operating in strong oligopolistic structures or where the use of patent protection is predominant which may encourage aggressive product/service market pricing strategies. The higher the level of appropriations relative to operating cash flow, the higher is the extent to which revenue is scaled down.

The CKPGs whose Sustainable Revenue calculation are impacted by the adjustment factor are:

- Telecom providers
- Pharmaceutical and biotech manufacturing

*\*See KPIs and Weighting Scheme on slide 20*

# Global 100 Methodology Updates

**8. Sustainable Revenue and Sustainable Investments:** Starting with the 2023 Global 100, the following CKPGs will no longer be measured on Sustainable Investments; the 7.5% previously allocated to this KPI will now be added to the Sustainable Revenue KPI for a sum of 50% weight.

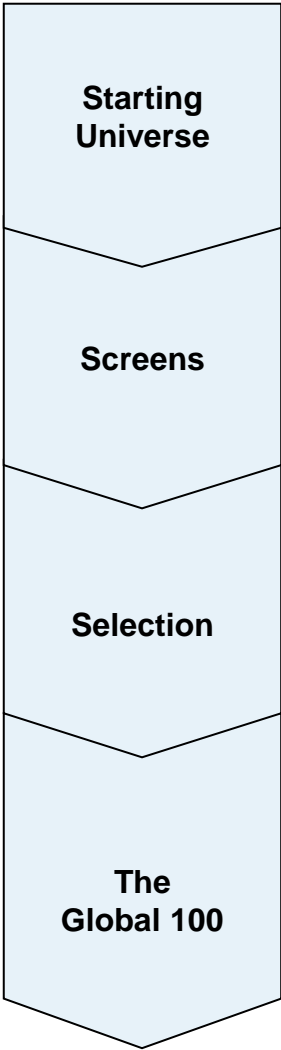
- Banks
- Insurance companies
- Asset management

**9. Supplier Score:** Companies will now be asked to provide the names and ISIN codes of their **five** largest publicly-traded suppliers. The supplier with the highest Overall Score out the five will be used towards the company's Supplier Score KPI.

**10. CK Sustainable Taxonomy:** For all other updates, please review the Revisions Log sheet in the [Corporate Knights Sustainable Economy Taxonomy V6.0](#).



# Overview of Global 100 ranking process



## Description

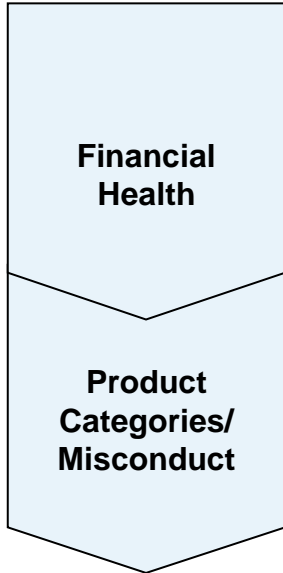
- Publicly-listed companies.
  
- Companies screened for :
  - Financial health
  - Product categories and misconduct
  
- Companies in the 2023 Global 100 Universe are scored on 25 KPIs.
  
- The 2023 Global 100 is populated.
- Consists of the top performing (by Overall Score) companies within each peer group.

*\* Energy and Utilities GICS Sector slots are combined to give precedence to the companies contributing to energy transition.*

## Details

- All companies that had a gross revenue in excess of \$PPP-currency \$1 billion during the 2021 rating year (RY)\*.
- \* RY 2021: Any fiscal year end between July 1st, 2021 and June 30th, 2022.*
- 
- Screening criteria outlined in the next slide.
- 
- Selection criteria outlined in the Rating Methodology section and detailed in Appendix II.
- 
- Each GICS Sector is assigned a fixed number of slots in the final Global 100 list (based on each sector’s contribution to the total market capitalization of the Global 100’s financial benchmark, the MSCI ACWI)\*.
  - Only companies which have reported data for at least their three most highly weighted KPIs (excluding Sustainable Revenue and Sustainable Investment) are eligible for the Global 100 (“Eligible Universe”)

# Screening criteria



## Description

- Companies with an F score below 3 are eliminated.
- Companies involved in certain products or services and behaviours counterproductive to sustainable development.

## Details

- The F-Score (the Piotroski F-score) is a measure of the financial strength of a company.
- The F-score is the sum of the scores for each of nine tests. See Appendix I for details.
- Examples include weapons, tobacco, companies that lobby to block climate change policy.
- See Appendix III for a full list of exclusionary screens.

# Quick Resources

## 2023 Global 100 Ranking

### [Corporate Knights Sustainable Taxonomy](#)

The complete Corporate Knights Sustainable Taxonomy

*Excel spreadsheet via Research Website*

### [KPI Data Point Definitions](#)

A table detailing each data point collected by Corporate Knights, their codes, categories (Environment/Social/Governance/Economic), subcategories (indicators for which data point is used in e.g. Pension Fund Quality), and detailed definitions

*Excel spreadsheet*

### [Indicator Weights 2023](#)

Weights used for score calculations for each indicator for each CKPG

*Excel spreadsheet*

### [Weight Calculation Methodology](#)

Walk-through of the methodology for calculating the impact and weight for each indicator for each CKPG

*PDF*

### [2023 G100 Universe](#)

Alphabetical list of all companies considered for as a part of the Global 100 ranking universe

*Excel spreadsheet*

### [CKPG List](#)

Alphabetical list of all 64 Corporate Knights Peer Groups (CKPGs)

*Excel spreadsheet*

### [Company Summary Scorecard \(Sample\)](#)

Sample of the Summary Scorecard (available for companies on request)

*Excel spreadsheet*

# Rating Methodology


## 2023 Global 100 Ranking

# Environmental Metrics


KPI	Methodology
<b>Energy Productivity</b>	Revenue (converted to USD using PPP exchange rate) / (Energy use – renewable energy generated by the company or certified RECs)
<b>GHG Productivity</b>	Revenue (converted to USD using PPP exchange rate) / GHG emissions: scope 1 & 2
<b>Water Productivity</b>	Revenue (converted to USD using PPP exchange rate) / Water withdrawn* (* Water consumed for select CKPGs – see slide #5)
<b>Waste Productivity</b>	Revenue (converted to USD using PPP exchange rate) / Total non-recycled waste generated* (* Waste rock and tailings are subtracted for select CKPGs – see slide #6)
<b>VOC Productivity</b>	Revenue (converted to USD using PPP exchange rate) / VOC emissions
<b>NOx Productivity</b>	Revenue (converted to USD using PPP exchange rate) / NOx emissions
<b>SOx Productivity</b>	Revenue (converted to USD using PPP exchange rate) / SOx emissions
<b>Particulate Matter Productivity</b>	Revenue (converted to USD using PPP exchange rate) / Particulate matter emissions

**In most Peer Groups, a small number of KPIs account for the majority of the weight.**

# Environmental Metrics

KPI	Methodology
<p><b>Sustainable Revenue</b></p> <p><i>* This is a multi-year project by Corporate Knights to develop and make publicly-available an open-source definition of sustainable categories for all peer groups; we welcome comments and suggestions in evolving and refining this sustainable revenue definition.</i></p>	<p>Percentage of total revenue derived from products and services that are categorized as “sustainable” according to the Corporate Knights open-source Sustainable Economy Taxonomy, which is informed by synthesis of, among others, the below sources and best practices:</p> <ul style="list-style-type: none"> <li>- Climate Bonds Taxonomy (Climate Bonds Initiative)</li> <li>- EU Taxonomy for Sustainable Activities</li> <li>- Sustainability Accounting Standards Board (SASB) reporting standards</li> <li>- Environmental Goods and Services Sector (Eurostat)</li> <li>- China Green Bond Endorsed Project Catalogue</li> <li>- Green Bond Principles</li> <li>- TCFD recommended climate opportunity metrics</li> <li>- Other private sector rating agencies with green or sustainability taxonomy</li> <li>- Industry expert consultation covering all relevant CKPG subsectors with solicited feedback on industry definition of sustainable from leading industry experts and government agencies</li> </ul> <p>Please click on the link below to download the most up-to-date Sustainable Taxonomy</p> <p style="text-align: center;"></p> <p style="text-align: center;"><a href="#"><u>Corporate Knights Sustainable Taxonomy</u></a></p>

# Environmental Metrics

KPI	Methodology
<b>Sustainable Investment</b>	<p>Percentage of a company's total investment (R&amp;D, Capital expenditures, Acquisitions &amp; Other) directed towards projects/research/companies categorized as "sustainable" according to the Corporate Knights open-source sustainable taxonomy.</p> <p>Please click on the link below to download the most up-to-date Sustainable Taxonomy</p> <p style="text-align: center;"></p> <p style="text-align: center;"><a href="#"><u>Corporate Knights Sustainable Taxonomy</u></a></p>

# Social Metrics

KPI	Methodology
<b>Injuries</b>	Lost time incidents rate per 200,000 hours for both employees and contractors
<b>Fatalities</b>	Fatalities / total number of full-time equivalent employees
<b>Employee Turnover</b>	Number of departures (voluntary and involuntary) / total average employees
<b>Paid Sick Leave</b>	Paid sick leave (10+ days, 50%+ of pay) offered to employees in the country where the company is headquartered.

**In most Peer Groups, a small number of KPIs account for the majority of the weight.**



# Governance Metrics

KPI	Methodology
<b>Sustainability Pay Link</b>	Mechanisms that link senior executive pay to sustainability targets
<b>Non-males in Executive Management</b>	Non-male representation on executive management team (percentile-ranked against all companies in the universe)
<b>Non-males on Boards</b>	Non-male representation on board of directors (percentile ranked against all companies in the universe)
<b>Racial Diversity Among Executives</b>	Number of top tier executives who are members of a visible minority compared to the population of their executive peers in headquarter country (percentile-ranked against all companies in the universe).
<b>Racial Diversity on Board of Directors</b>	Number of board directors who are members of a visible minority compared to the population of their director peers in headquarter country (percentile ranked against all companies in the universe).
<b>Supplier Sustainability Score</b>	The weighted CK Sustainability Score of a company's largest publicly listed supplier
<b>Political Influence</b>	<p>Corporate engagement, monitoring and reporting systems in regard to its own lobbying activities and that of the trade/industry associations, coalitions and alliances of which the company is a member, its suppliers and/or funded thinktanks to advance the goals of the Paris Agreement.</p> <p>Disclosure of all trade/industry association memberships, including Board leadership positions and climate-related committee memberships</p>

**In most Peer Groups, a small number of KPIs account for the majority of the weight.**

# Economic Metrics

KPI	Methodology
<b>CEO-Average Employee Pay</b>	CEO compensation or highest paid Exec / average employee compensation*
<b>Percentage Tax Paid</b>	Cash tax amount paid / EBITDA – five-year trailing (2017-2021)
<b>Pension Fund Quality</b>	75%*(total DB and DC employer contributions/ FTE employees percentile-ranked against peers) + 25%*((fair value of DB plan assets/FTE employees percentile-ranked against peers) - (1-(fair value of DB plan assets/liability percentile-ranked against peers) ). Note: DC contributions include 401(k), RRSPs and equivalents.
<b>Sanction Deductions</b> (January 1, 2021 to December 31, 2021)	Total fines, penalties and settlements / revenue

\* Total compensation to all senior executives are subtracted from employee pay)

**In most Peer Groups, a small number of KPIs account for the majority of the weight.**

# Data Point Definitions

To view the specific definitions for all data points that feed into the indicator calculations, please click the link below



[KPI Data Point Definitions 2023](#)

# Priority KPIs and Weighting Scheme for Each CK Peer Group

# KPIs and Weighting Scheme

## Philosophy

The Corporate Knights Global 100 rating places equal emphasis on a company's operations and its products and service from a revenue and investment perspective. The Global 100 methodology uses a mix of fixed and variable weight ESG and sustainable economy key performance indicators to score companies against their peers. We measure the share of revenues and capital investments that are included in the Corporate Knights Sustainable Taxonomy and percentile rank those ratios against the company's peer group. We then give equal weight to the ratios and the percentile ranks in awarding up to 42.5 points for sustainable revenue and up to 7.5 points for sustainable investment, for a total of 50 possible points.

The other 50 points in the Global 100 are allocated to 22 ESG KPI's. Eight of these KPI's are allocated 21 points as follows: Gender Diversity on Board of Directors (2.5), Gender Diversity Among Executives (2.5), Racial Diversity Among Executives (2.5), Racial Diversity on Board of Directors (2.5), Sustainability Pay Link (5), Supplier Score (2.5), Paid Sick Leave (2.5) and Political Influence (1.0). Each company is awarded points for these indicators based on its performance in comparison to all other companies, regardless of industry.

The remaining 29 points in the Global 100 rating system are allocated to fourteen KPI's where the weights vary by CKPG. The KPI's weighted this way include productivities for energy, carbon, waste, water, VOC, NOx, SOx, PM; as well as the injury rate, fatality rate, employee turnover, CEO pay ratio, cash taxes to EBITDA ratio, and the pension quality. (See additional description below on the impact ratios and indicator weights methodology.)

In addition, up to five points are deducted for companies that have been levied fines above a percentage threshold of their revenue in comparison to their peers, and finally, companies are deemed ineligible for the Global 100 if they fail to pass our exclusionary screens.



## Impact ratios and indicator weights

For each of the 64 CK Peer Groups, impact ratios are computed and used to assign weights to each of the 14 impact-weighted KPI's. For each CKPG-KPI combination, the impact ratio depends on the ratio of the KPI median for the industry to the KPI median for all industry and on the contribution that the CKPG makes to the total impact for the KPI across all industries. For each CKPG, the indicator weights for the 14 impact-weighted KPI's are equal to the share of each KPI's impact ratio to the sum of the impact ratios for that industry. To maximize the focus on KPIs which have more impact, any KPI (except Energy Productivity, GHG Productivity, CEO pay ratio, cash taxes to EBITDA ratio and pension quality) whose weight is less than 2.5%\* are eliminated (weighted at 0%) and redistributed proportionately to the remaining impact-weighted KPIs. (Note: There are some CKPG-KPI combinations for which there is insufficient data to produce statistically significant impact ratios, and the impact-weighting can therefore not be applied.)

*\* Exceptions were made for KPIs in a number of CKPGs whose weights are under 2.5% due to the impact being relevant according to CK Research. In such cases, the KPI remains applicable despite a weight of less than 2.5%.*

To see a detailed outline of the weights calculation process, please click the link below

[Corporate Knights Impact-weight Calculation Methodology](#)

# Priority indicators and weights per CK Peer Group

To see the weights for each indicator and CKPG, please download the corresponding spreadsheet from the link below.



[Corporate Knights Indicator Weightings](#)

# Policy for Changes to the Global 100 Index Methodology

The methodology to the Global 100 Index is reviewed at least annually by Corporate Knights Research staff.

An oversight committee composed of staff from Corporate Knights and its subsidiaries (the “Committee”) is responsible for decisions regarding any amendments to the rules of the Index. Any such amendment must be submitted to the Committee for prior approval.

Any changes or updates to any part of the Global 100 methodology are published prior to the beginning of a rating cycle or issuance of an index reconstitution.

Any such methodological updates are communicated through the *Global 100 Methodology Updates* section in the *Overview of Corporate Knights Rating Methodology* document which is published on [www.corporateknights.com](http://www.corporateknights.com).

Link to the aforementioned document is included in any communication from Corporate Knights to users of the Index as well as companies eligible for the Global 100 ranking.

# Appendices I - IV

## 2023 Global 100 Ranking



# Appendix I: The F-Score

- The F-Score (the Piotroski F-score) is a measure of the financial strength of a company.
- The F-Score is the sum of the scores for each of nine tests. Each test scores one for a pass and zero for a fail.
- The tests are:
  - i) net profit is positive;
  - ii) operating cash flow is positive;
  - iii) net profit  $\div$  total assets at beginning of year;
  - iv) operating cash flow is greater than net profit;
  - v) long term debt  $\div$  by average assets has not increased;
  - vi) the current ratio has increased (the change is more than zero, so even a negligible increase passes the test);
  - vii) no raising of ordinary (common) equity over the previous year: this test is passed if the company did not issue any ordinary shares (excluding shares from dividend reinvestment plans and employee share plans);
  - viii) gross margin has improved over the previous year; and
  - ix) asset turnover has increased.

## Appendix II: Detailed scoring methodology

Name of KPI	Measurement	UN Sustainable Development Goals
<b>Energy Productivity</b>	<p>In the first step, each company's Energy Productivity is calculated. Energy Productivity is defined as Revenue (\$PPP-converted) / Total Energy Use (GJ) – Certified RECs and purpose built renewable generation (GJ) (does not apply to standard grid issue). It is then percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe, and multiplied by 0.75. In the second step, the change in each company's Energy Productivity over a two-year period is calculated and percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe. If the company's ranked fiscal year percent-rank is top quartile, the three-year change percent-rank is multiplied by 1 and then by 0.25. If the company's ranked fiscal year percent-rank is second quartile, the three-year change percent-rank is multiplied by 0.75 and then by 0.25. If the company's ranked fiscal year percent-rank is third quartile, the three-year change percent-rank is multiplied by 0.5 and then by 0.25. If the company's ranked fiscal year percent-rank is bottom quartile, the three-year change percent-rank is multiplied by 0.25 and then by 0.25. In the third step, the value from the first and second steps are totaled.</p>	<ul style="list-style-type: none"> <li>• GOAL 7: Affordable and Clean Energy</li> <li>• GOAL 9: Industry, Innovation and Infrastructure</li> </ul>
<b>GHG Productivity</b>	<p>In the first step, each company's Greenhouse Gas (GHG) productivity is calculated. GHG Productivity is defined as Revenue (\$PPP-converted) / Total Greenhouse gas (GHG) Emissions (tCO2e). Only location-based Scope 1 and Scope 2 emissions are included according to the GHG Protocol. It is then percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe, and multiplied by 0.75. In the second step, the change in each company's GHG Productivity over a two-year period is calculated and percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe. If the company's ranked fiscal year percent-rank is top quartile, the three-year change percent-rank is multiplied by 1 and then by 0.25. If the company's ranked fiscal year percent-rank is second quartile, the three-year change percent-rank is multiplied by 0.75 and then by 0.25. If the company's ranked fiscal year percent-rank is third quartile, the three-year change percent-rank is multiplied by 0.5 and then by 0.25. If the company's ranked fiscal year percent-rank is bottom quartile, the three-year change percent-rank is multiplied by 0.25 and then by 0.25. In the third step, the value from the first and second steps are totaled.</p>	<ul style="list-style-type: none"> <li>• GOAL 9: Industry, Innovation and Infrastructure</li> <li>• GOAL 13: Climate Action</li> </ul>

## Appendix II: Detailed scoring methodology

Name of KPI	Measurement	UN Sustainable Development Goals
<b>Water Productivity</b>	<p>In the first step, each company's Water Productivity is calculated. Water Productivity is defined as Revenue (\$PPP-converted) / Total water withdrawn (m3)*. It is then percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe, and multiplied by 0.75. In the second step, the change in each company's Water Productivity over a two-year period is calculated and percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe. If the company's ranked fiscal year percent-rank is top quartile, the three-year change percent-rank is multiplied by 1 and then by 0.25. If the company's ranked fiscal year percent-rank is second quartile, the three-year change percent-rank is multiplied by 0.75 and then by 0.25. If the company's ranked fiscal year percent-rank is third quartile, the three-year change percent-rank is multiplied by 0.5 and then by 0.25. If the company's ranked fiscal year percent-rank is bottom quartile, the three-year change percent-rank is multiplied by 0.25 and then by 0.25. In the third step, the value from the first and second steps are totaled.</p> <p>* Water consumed defined as Water withdrawn – Water discharged for the Power Generation CKPG and Water and sewage treatment CKPG</p>	<ul style="list-style-type: none"> <li>• GOAL 6: Clean Water and Sanitation</li> <li>• GOAL 9: Industry, Innovation and Infrastructure</li> </ul>
<b>Waste Productivity</b>	<p>In the first step, each company's Waste Productivity is calculated. Waste includes total amount of solid waste produced in tonnes (includes hazardous and non-hazardous waste generated from owned and leased facilities, including landfill and materials sent for incineration. Total waste also includes waste recycled (recycled waste, repurposed materials, and compost). Waste Productivity is defined as Revenue (\$PPP-converted) / [Total waste generated (metric tonnes)* – waste recycled (metric tonnes)]. It is then percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe, and multiplied by 0.75. In the second step, the change in each company's Waste Productivity over a two-year period is calculated and percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe. If the company's ranked fiscal year percent-rank is top quartile, the three-year change percent-rank is multiplied by 1 and then by 0.25. If the company's ranked fiscal year percent-rank is second quartile, the three-year change percent-rank is multiplied by 0.75 and then by 0.25. If the company's ranked fiscal year percent-rank is third quartile, the three-year change percent-rank is multiplied by 0.5 and then by 0.25. If the company's ranked fiscal year percent-rank is bottom quartile, the three-year change percent-rank is multiplied by 0.25 and then by 0.25. In the third step, the value from the first and second steps are totaled.</p> <p>* Total waste excludes waste rock and tailings for the Metal and coal mining, Non-metallic mining, Oil and Gas production and Smelters and steelmaking CKPGs</p>	<ul style="list-style-type: none"> <li>• GOAL 9: Industry, Innovation and Infrastructure</li> <li>• GOAL 11: Sustainable Cities and Communities</li> <li>• GOAL 12: Responsible Consumption and Production</li> <li>• GOAL 15: Life on Land</li> </ul>

## Appendix II: Detailed scoring methodology

Name of KPI	Measurement	UN Sustainable Development Goals
<b>VOC Productivity</b> <b>NOx Productivity</b> <b>SOx Productivity</b> <b>Particulate Matter Productivity</b>	<p>In the first step, each company's sub-indicator Productivity is calculated by dividing Revenue (\$PPP-converted) by the air pollutant (tonnes). It is then percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe, and multiplied by 0.75. In the second step, the change in each company's sub-indicator Productivity over a two-year period is calculated and percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe. If the company's ranked fiscal year percent-rank is top quartile, the three-year change percent-rank is multiplied by 1 and then by 0.25. If the company's ranked fiscal year percent-rank is second quartile, the three-year change percent-rank is multiplied by 0.75 and then by 0.25. If the company's ranked fiscal year percent-rank is third quartile, the three-year change percent-rank is multiplied by 0.5 and then by 0.25. If the company's ranked fiscal year percent-rank is bottom quartile, the three-year change percent-rank is multiplied by 0.25 and then by 0.25. In the third step, the value from the first and second steps are totaled.</p>	<ul style="list-style-type: none"> <li>• GOAL 3: Good Health and Well-being</li> <li>• GOAL 9: Industry, Innovation and Infrastructure</li> <li>• GOAL 11: Sustainable Cities and Communities</li> <li>• GOAL 12: Responsible Consumption and Production</li> </ul>
<b>Percentage Tax Paid</b>	<p>In the first step, each company's Percentage Tax Paid is calculated as the amount of taxes paid in cash over a trailing five-year period divided by their total EBITDA (note: not adjusted EBITDA) over the same period. Companies score a 0% in the event that their total EBITDA or taxes paid in cash is zero or lower over the five-year period. In the second step, each company's Percentage Tax Paid is percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe. Note: "Operating Income" is used in place of EBITDA for financial services companies. Financials include the following CKPGs: Banks, Insurance companies and Asset management. For government-owned companies, dividends to the government are not included in this metric.</p>	<ul style="list-style-type: none"> <li>• GOAL 10: Reduced Inequality</li> </ul>
<b>CEO-Average Employee Pay Ratio</b>	<p>Each company's CEO to Average Employee Pay ratio is calculated as total CEO compensation or highest paid executive divided by average employee compensation. Average employee compensation is calculated by dividing the company's total wage bill (incl. social contributions as stipulated by law, such as state pension, social insurance, health insurance etc. minus total compensation to senior executives) by the total number of employees excl. senior executives. Each company's CEO to Average Employee Pay ratio is percent-ranked against the entire CK coverage universe. The lower the ratio, the higher the rank.</p>	<ul style="list-style-type: none"> <li>• GOAL 8: Decent Work and Economic Growth</li> <li>• GOAL 10: Reduced Inequality</li> </ul>

## Appendix II: Detailed scoring methodology

Name of KPI	Measurement	UN Sustainable Development Goals
<b>Pension Fund Quality</b>	<p>In the first step, the sum of the company’s contribution to the defined benefit and defined contribution pension plans are added up, then divided by the total number of full-time equivalent employees. Note that DC contributions include 401(k), RRSPs and equivalents. This ratio is then percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe. This is labelled as “A”.</p> <p>In the second step, the fair value of the defined benefit plan assets is divided by the total number of full-time equivalent employees; this ratio is then percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe. This is labelled as “B”.</p> <p>In the third step, the fair value of the defined benefit plan assets is divided by the projected defined benefit plan obligations, then percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe. This is labelled as “C”.</p> <p>The Pension Fund Quality Score is arrived at by the following formula: <math>(0.75 \times A) + 0.25(B - (1 - C))</math></p>	<ul style="list-style-type: none"> <li>• GOAL 1: No Poverty</li> <li>• GOAL 8: Decent Work and Economic Growth</li> </ul>
<b>Supplier Sustainability Score</b>	<p>Each company’s largest publicly listed supplier by total spend. The supplier is then weighted and scored using the Global 100 methodology excluding the Supplier Sustainability Score KPI.</p>	<ul style="list-style-type: none"> <li>• GOAL 1: No Poverty</li> <li>• GOAL 2: Zero Hunger</li> <li>• GOAL 3: Good Health and Well-being</li> <li>• GOAL 5: Gender Equality</li> <li>• GOAL 6: Clean Water and Sanitation</li> <li>• GOAL 7: Affordable and Clean Energy</li> <li>• GOAL 8: Decent Work and Economic Growth</li> <li>• GOAL 9: Industry, Innovation and Infrastructure</li> <li>• GOAL 10: Reduced Inequality</li> <li>• GOAL 11: Sustainable Cities and Communities</li> <li>• GOAL 12: Responsible Consumption and Production</li> <li>• GOAL 13: Climate Action</li> <li>• GOAL 14: Life Below Water</li> <li>• GOAL 15: Life on Land</li> <li>• GOAL 16: Peace and Justice Strong Institutions</li> <li>• GOAL 17: Partnerships to achieve the Goal</li> </ul>

## Appendix II: Detailed scoring methodology

Name of KPI	Measurement	UN Sustainable Development Goals
<b>Injuries</b>	Each company's Injury Score is determined by calculating the company's lost time injury rate (defined as the number of lost time incidents per 200,000 employee hours) and percent-ranking it against all of the same-CK Peer Group peers within the CK coverage universe. In line with GRI: This metric applies to employees (full time and part time), contracted employees (permanent and temporary), and any other workers where a company has control (shared or sole) of the work or workplace.	<ul style="list-style-type: none"> <li>GOAL 8: Decent Work and Economic Growth</li> </ul>
<b>Fatalities</b>	Each company's Fatality Score is determined by calculating the company's fatality rate (defined as the number of fatalities by employees and contractors divided by the total number of full-time equivalent employees) and percent-ranking it against all of the same-CK Peer Group peers within the CK coverage universe. In line with GRI: This metric applies to employees (full time and part time), contracted employees (permanent and temporary), and any other workers where a company has control (shared or sole) of the work or workplace.	<ul style="list-style-type: none"> <li>GOAL 8: Decent Work and Economic Growth</li> </ul>
<b>Employee Turnover</b>	Each company's Employee Turnover (Number of departures [voluntary and involuntary] / average total employees) is percent-ranked against all of the same CK Peer Group peers within the CK coverage universe. The lower the ratio, the higher the rank.	<ul style="list-style-type: none"> <li>GOAL 8: Decent Work and Economic Growth</li> </ul>
<b>Executive Gender Diversity</b>	Each company's Executive Gender Diversity Score is calculated by determining the percentage of the senior executive team that is comprised of non-male executives and percent-ranking it against all companies within the CK coverage universe.	<ul style="list-style-type: none"> <li>GOAL 5: Gender Equality</li> </ul>
<b>Board Gender Diversity</b>	Each company's Board Gender Diversity Score is calculated by determining the percentage of the Board of Directors that is comprised of non-male directors (including employee representatives and excluding non-voting members) and percent-ranking it against that of all companies within the CK coverage universe.	<ul style="list-style-type: none"> <li>GOAL 5: Gender Equality</li> </ul>

## Appendix II: Detailed scoring methodology

Name of KPI	Measurement	UN Sustainable Development Goals
<b>Racial Diversity Among Executive Management</b>	<p>Each company's Executive Racial Diversity Score is calculated by determining the percentage of top tier executives who are members of a visible minority in relation to the dominant peer group of executives in the headquarter country of the company in question, and percent-ranking it against all companies within the CK coverage universe. In Europe, Australia and North America for instance, this means the number of non-Caucasian directors or executives. Based on time-of-review assessment of bios, names and photos, located on the current company website.</p> <p>Exception: In the case of South Africa, due to the legacy of the Apartheid System, despite Caucasians account for a minority of the population, only non-Caucasian executives are counted towards racial diversity.</p>	<ul style="list-style-type: none"> <li>GOAL 10: Reduced Inequalities</li> </ul>
<b>Racial Diversity on Boards</b>	<p>Each company's Board Racial Diversity Score is calculated by determining the percentage of board directors who are who are members of a visible minority in relation to the dominant peer group of board members in the headquarter country of the company in question, and percent-ranking it against all companies within the CK coverage universe. In Europe, Australia and North America for instance, this means the number of non-Caucasian directors or executives. Based on time-of-review assessment of bios, names and photos, located on the current company website.</p> <p>Exception: In the case of South Africa, due to the legacy of the Apartheid System, despite Caucasians account for a minority of the population, only non-Caucasian directors are counted towards racial diversity.</p>	

## Appendix II: Detailed scoring methodology

Name of KPI	Measurement	UN Sustainable Development Goals
<b>Paid Sick Leave</b>	<p>In the country where the company is headquartered, a paid sick-leave policy is considered sufficient if it allows for 10 or more paid sick-leave days per year (for FTEs who have been at the company a minimum of one year), where the employee receives 50% or more of their pay for sick days. A full workday is assumed to be 8 hours and a standard workweek 40 hours. Paid Sick Leave does not use any percent-ranking. The data was sourced from the following sources (in priority sequence): company website, company benefits report/publications, news articles from reputable sources, and employee-sourced Glassdoor/Indeed reviews from the last three years.</p>	<ul style="list-style-type: none"> <li>• GOAL 3: Good Health and Well-Being</li> <li>• GOAL 8: Decent Work and Economic Growth</li> </ul>
<b>Sustainability Pay Link</b>	<p>The Sustainability Pay Link indicator is designed to reward companies that have set up mechanisms to link the remuneration of the CEO with the achievement of sustainability goals or targets. Companies are scored as follows:</p> <ul style="list-style-type: none"> <li>• 0% - No pay link</li> <li>• 1% - Indicates existence of a CEO pay link but does not state the % of total variable pay that is tied to the pay link</li> <li>• Up to an additional 4%, where a company indicates the existence of a CEO pay link <b>AND</b> discloses:             <ol style="list-style-type: none"> <li>A. The monetary amount earned by the CEO that is tied to the pay link, and;</li> <li>B. The CEO's total variable (short-term and long-term)</li> </ol> </li> <li>• The resulting percentage (A/B) is percent-ranked against that of all companies in the CK coverage universe, then multiplied by 4%.</li> </ul>	<ul style="list-style-type: none"> <li>• GOAL 3: Good Health and Well-being</li> <li>• GOAL 5: Gender Equality</li> <li>• GOAL 6: Clean Water and Sanitation</li> <li>• GOAL 7: Affordable and Clean Energy</li> <li>• GOAL 8: Decent Work and Economic Growth</li> <li>• GOAL 9: Industry, Innovation and Infrastructure</li> <li>• GOAL 10: Reduced Inequality</li> <li>• GOAL 11: Sustainable Cities and Communities</li> <li>• GOAL 12: Responsible Consumption and Production</li> <li>• GOAL 13: Climate Action</li> <li>• GOAL 14: Life Below Water</li> <li>• GOAL 15: Life on Land</li> <li>• GOAL 16: Peace and Justice Strong</li> </ul>



## Appendix II: Detailed scoring methodology

Name of KPI	Measurement	UN Sustainable Development Goals
<b>Sanctions Deduction</b>	<p>Each company's Sanctions' ratio is determined by measuring the ratio of Sanctions (the amount of money that companies paid out in qualifying fines, penalties or settlements over the period January 1, 2021 to December 31, 2021 period unless they are being appealed and thus have not been paid) to total revenue for the same or closest match period. Note only entries of at least USD \$100,000 are included. Each company's Sanctions ratio is percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe. Companies receive deductions on a graded scale up to a maximum of 5% off their overall score. Companies with no Sanctions receive no deductions.</p>	<ul style="list-style-type: none"> <li>• GOAL 1: No Poverty</li> <li>• GOAL 3: Good Health and Well-being</li> <li>• GOAL 5: Gender Equality</li> <li>• GOAL 6: Clean Water and Sanitation</li> <li>• GOAL 7: Affordable and Clean Energy</li> <li>• GOAL 8: Decent Work and Economic Growth</li> <li>• GOAL 9: Industry, Innovation and Infrastructure</li> <li>• GOAL 10: Reduced Inequality</li> <li>• GOAL 11: Sustainable Cities and Communities</li> <li>• GOAL 12: Responsible Consumption and Production</li> <li>• GOAL 13: Climate Action</li> <li>• GOAL 14: Life Below Water</li> <li>• GOAL 15: Life on Land</li> <li>• GOAL 16: Peace and Justice Strong Institutions</li> </ul>
<b>Political Influence</b>	<p>As a bonus of up to 3%, this indicator tracks whether or not, directly or through its agent(s):</p> <ul style="list-style-type: none"> <li>• The company's climate policy and lobbying activities with policy makers are aligned with the Paris Agreement (Yes = 1%)</li> <li>• The company has a system in place to monitor, report and take corrective action on any misalignment between the goals of the Paris Agreement and the climate change lobbying activities of trade/industry associations, coalitions and alliances of which the company is a member, its suppliers and/or thinktanks funded by the company on at least a biennial basis (Yes = 1%)</li> <li>• The company discloses all trade/industry association memberships, including Board leadership positions and climate-related committee memberships, with a commitment to make that list public by end of 2023 (Yes = 1%)</li> </ul>	GOAL 13: Climate Action

# Appendix II: Detailed scoring methodology

Name of KPI	Measurement	UN Sustainable Development Goals
<b>Sustainable Revenue</b>	<p>Each company's Sustainable Revenue ratio is determined by measuring the ratio of Sustainable Revenue to total revenue according to the open-source Corporate Knights Sustainable Economy Taxonomy. Each company's Sustainable Revenue ratio is percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe. The Sustainable Revenue ratio and Sustainable Revenue percentile rank are equally weighted in the calculation of the contribution towards the overall score (known as the 50/50 rule).</p>	
<b>Sustainable Investment</b>	<p>Each company's Sustainable Investment ratio is determined by measuring the ratio of Sustainable Investment to total investment by applying the open-source Corporate Knights Sustainable Economy Taxonomy. Each company's Sustainable Investment ratio is percent-ranked against all of the same-CK Peer Group peers within the CK coverage universe. The sustainable investment ratio and sustainable investment percentile rank are equally weighted in the calculation of the contribution towards the overall score (known as the 50/50 rule).</p> <p>Total Sustainable Investment Includes:</p> <ul style="list-style-type: none"> <li>-Total capital expenditures (investments in plant, property, and equipment or similar) consistent with the Corporate Knights Sustainable Taxonomy. Found in the cash flow statement.</li> <li>-Total Research and Development (R&amp;D) consistent with the Corporate Knights Sustainable Taxonomy. Found in the income statement.</li> <li>- Any completed acquisitions (cash amount), joint-ventures, or equity investments in companies or funds (not counted under Sustainable CapEx or Sustainable R&amp;D) consistent with the Corporate Knights Sustainable Taxonomy. Generally found in financial statement notes.</li> </ul> <p>For non-financial companies, sustainable investments refer to any investments that align with the Corporate Knights Sustainable Taxonomy. The Sustainable Investment KPI is not applicable to companies in the finance and insurance sectors.</p>	<ul style="list-style-type: none"> <li>• GOAL 1: No Poverty</li> <li>• GOAL 2: Zero Hunger</li> <li>• GOAL 3: Good Health and Well-being</li> <li>• GOAL 4: Quality Education</li> <li>• GOAL 5: Gender Equality</li> <li>• GOAL 6: Clean Water and Sanitation</li> <li>• GOAL 7: Affordable and Clean Energy</li> <li>• GOAL 8: Decent Work and Economic Growth</li> <li>• GOAL 9: Industry, Innovation and Infrastructure</li> <li>• GOAL 10: Reduced Inequality</li> <li>• GOAL 11: Sustainable Cities and Communities</li> <li>• GOAL 12: Responsible Consumption and Production</li> <li>• GOAL 13: Climate Action</li> <li>• GOAL 14: Life Below Water</li> <li>• GOAL 15: Life on Land</li> <li>• GOAL 16: Peace and Justice Strong Institutions</li> <li>• GOAL 17: Partnerships to achieve the Goal</li> </ul>

## Appendix II: Detailed scoring methodology

Letter Grade	Overall Score
A+	Awarded to the top company
A	Above 75%
A-	70-75%
B+	65-70%
B	60-65%
B-	55-60%
C+	50-55%
C	45-50%
C-	40-45%
D+	35-40%
D	30-35%
D-	25-30%

## Appendix III: Exclusionary Screens

Metric	Description
Access to medicine laggards	Lagging pharmaceutical companies in the bottom quartile of the <a href="#">Access to Medicine ranking</a> .
Access to nutrition laggards	Lagging food companies in the bottom quartile of the <a href="#">Access to Nutrition index</a> .
Adult entertainment	Companies operating in the adult entertainment industry based on <a href="#">Motley Fool</a> , Wespath, <a href="#">Sin Stocks</a> , and <a href="#">RedLightNetwork</a> report listings.
Blocking climate policy	Companies who have been red flagged by InfluenceMap for engaging in a manner largely opposing Paris-aligned climate policy in an active and often strategic manner.
Blocking climate resolutions	Asset managers that are voting negatively on climate policy resolutions according to InfluenceMap's <a href="#">voting record</a> (bottom quartile).
Cement carbon laggards	Companies in the cement industry that were divested by Norges Bank Investment Management ( <a href="#">NBIM</a> ) for climate change reasons (internal Corporate Knights analysis).
Civilian firearms	Companies that manufacture civilian automatic and semi-automatic firearms, magazines, or parts prohibited under New Zealand law that were divested from by the <a href="#">NZ SuperFund</a> .
Controversial weapons	Companies involved with cluster munition, anti-personnel mine, and nuclear weapons manufacturing that were divested by <a href="#">NBIM</a> and <a href="#">NZ SuperFund</a> .
Conventional weapons	The Top 25 weapons producers as tracked by <a href="#">Stockholm International Peace Research Institute</a> (SIPRI) for companies that earn more than 50% of revenue from weapons.
Deforestation & palm oil laggards	Companies engaging in deforestation as deemed by <a href="#">Chain Reaction Research</a> or <a href="#">NBIM</a> . List of companies obtained from <a href="#">Deforestation Free Funds</a> , which NBIM has divested from.
Energy	Companies that operate in the fossil fuel industry based on Global Industry Classification System (GICS) with less than 50% of new investments (most recently available) in themes consistent with decarbonization.

## Appendix III: Exclusionary Screens

Metric	Metric Description
Farm animal welfare laggards	Laggard companies in farm animal welfare practices according to CK Red Flag list (made in consultation with animal welfare experts).
For-profit prisons	Companies that are recommended for divestment by the <a href="#">Project of the American Friends Service Committee</a> and that demonstrate involvement in the various aspects of the prison industry.
Gambling	Companies that operate in the gambling industry based on Global Industry Classification System (GICS).
Gross corruption violations	Companies that have been divested from by <a href="#">NBIM</a> due to gross corruption violations.
Financial sanctions	Companies whose ratio of fines, penalties, or settlements / revenue for the last 12 months exceeds 1%.
Oil sands laggards	Oil sands companies that were divested by <a href="#">NBIM</a>
Severe environmental damage	Companies that have caused severe environmental damage and have been excluded by <a href="#">NBIM</a> .
Severe human rights violations	Companies that have committed severe human rights violations or have violated individuals' rights in situations of war or conflict and have been excluded by <a href="#">NBIM</a> .
Thermal coal	Identifies companies with more than 10% of generation or revenue is from thermal coal. Exception: If the company has less than 20% of generation or revenue that is from thermal coal <b>AND</b> - has no plans for expansion of coal <b>AND</b> - at least 50% of its investments are sustainable (according to the CK Sustainable Taxonomy) then the company is not excluded Source: Global Coal Exit List (GCEL)
Tobacco	Identifies companies that earn revenue from tobacco (GICS = Tobacco), and those excluded by <a href="#">NBIM</a> and <a href="#">NZ SuperFund</a>

# Appendix IV: Corporate Knights Notice and Disclaimer

This document and all of the information contained in it, including without limitation all text, data, graphs, charts (collectively, the “Information”) is the property of Corporate Knights Inc. known herein as “Corporate Knights” and is provided for informational purposes only. The Information may not be modified, reverse-engineered, reproduced or disseminated in whole or in part without prior written permission from Corporate Knights.

The Information may not be used to create indexes, databases, risk models, analytics, software, or in connection with the issuing, offering, sponsoring, managing or marketing of any securities, portfolios, financial products or other investment vehicles utilizing or based on, linked to, tracking or otherwise derived from the Information or any other Corporate Knights data, information, products or services.

Any use of or access to products, services or information of Corporate Knights requires a license from Corporate Knights. Corporate Knights brands and product names are the trademarks, service marks, or registered trademarks of Corporate Knights and its subsidiaries in Canada, United States and other jurisdictions.

© 2023 Corporate Knights. All rights reserved.