



BEST 50

CORPORATE CITIZENS

The 2024 Best 50:
Overview of Corporate Knights Rating Methodology

Corporate **Knights**

www.corporateknights.com/rankings/best-50-rankings/

Best 50 Fast Facts

Overview

- **Annual** ranking of Canadian corporate sustainability performance.
- **Released each June** & published in Corporate Knights Magazine.

Approach

- Ranking is based mostly on **publicly-disclosed data** (e.g., financial filings, sustainability reports, company websites).
- Submissions or payment from companies is **not** required.
- Companies in the Best 50 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 if you would like to confirm or update the correct contacts for your organization
- [Sign up for email updates](#) on future rankings and research from Corporate Knights

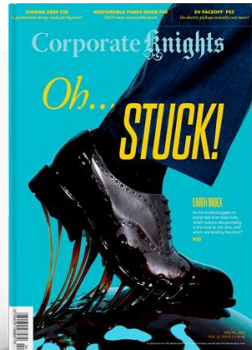
Eligibility

- **Size:** Publicly-traded companies on a Canadian stock exchange, privately-owned corporations headquartered in Canada and Canadian Crown corporations. Gross revenue of at least \$1B (RY 2022*).
- **Other inclusions:** Top 10 largest credit unions by assets under management, credit unions with at least 100,000 members, top 10 largest Canadian coop organizations by revenue, companies included in TSX / S&P Renewable Energy and Clean Technology Index (all revenues), and 2023 Best 50 companies.
- **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 (see Appendix III, Exclusionary Screens)

* RY 2022: Any fiscal year end between July 1st, 2022 and June 30th, 2023.

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 400k+ 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 Best 50

- **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 63 CKPGs.

*** Exceptions apply to a number of KPIs where performance comparison is against the whole universe of eligible companies. See Appendix II .

Best 50 Methodology Updates

01

KPI weights:

The following KPIs are being converted from variable to fixed weights of either 3.25% or 6.5%, depending on the CKPG group*:

- Cash Taxes Paid
- CEO Pay
- Pension Fund Quality
- Employee Turnover

CKPG Group A includes all CKPGs that are being assessed on at least three variably weighted indicators**. These CKPGs have the KPIs listed above weighted at 3.25%.

CKPG Group B includes all CKPGs that are only assessed on 2 variably weighted indicators (Carbon and Energy Productivity) and have the KPIs listed above weighted at 6.5%.

*See Appendix V

** Carbon Productivity, Energy Productivity, Water Productivity, Waste Productivity and Injury Rate

02

Penalties:

1. The following KPIs are being converted from variable weights to penalties that apply to a company's overall score:

- VOC Productivity
- NOx Productivity
- SOx Productivity
- PM Productivity
- Fatalities

Penalties for the air pollutant KPIs apply to CKPGs where the KPI has been deemed material. Penalties for fatalities apply to all CKPGs, percent ranked against all companies in the research universe.

2. Penalties also apply to companies in CKPGs where a given KPI was not deemed material if the underlying KPI value is in the top quartile against the whole universe. This penalty applies in the cases of:

- The four air pollutants (VOC, Nox, Sox, PM productivities)
- Waste Productivity
- Water Productivity
- Injury Rate

3. Penalties for Cash Taxes Paid apply to companies in CKPG Group A whose sum of \$PPP EBITDA over the most recent 5-year period is among the top decile in the research universe.

Best 50 Methodology Updates

03 Political Influence (bonus of 2.5%):

This KPI, which was first introduced for the 2023 Best 50, is being revised from three components to one, with the bonus weight being reduced from 3% to 2.5%. This indicator tracks whether the company discloses how its own and its major trade industry/association's policy engagements align with the Paris Agreement. Link to public document must be provided to receive the bonus.

04 Terminology change:

These diversity KPIs are being renamed as follows:

- Non-males in Executive Management is now Gender Diversity Among Executives
- Non-males on Boards is now Gender Diversity on Board of Directors

Best 50 Methodology Updates

05 CK Sustainable Economy Taxonomy:

Version 7.0 of the [Corporate Knights Sustainable Economy Taxonomy](#) was published on June 9th, 2023. All changes from Version 6.0 are detailed in the “Revisions Log” tab of the Taxonomy file. The most significant developments since Version 6.0 are updates to the quantification of sustainable revenues and investments in:

- The design and construction, ownership or management of buildings (Sustainable Economy Taxonomy Tier 1: Buildings),
- The mining industry (Tier 1: Primary Production; Tier 2: Sustainable Mining), and
- Telecommunications (Tier 1: Telecommunications, Information Technologies and Media; Tier 2: Sustainable Broadband, Wireless and Wireline Services)

Additionally, the CK Sustainable Economy Taxonomy can now be used to quantify commitments (sustainable revenue commitments, sustainable investment commitments and sustainable finance commitments).

06 Sustainable Revenue and Sustainable Investment weights:

Starting with the 2024 Best 50, all CKPG’s will be assessed on the sustainable economy indicators equally. The previous weight of 42.5% for Sustainable Revenue and 7.5% for Sustainable Investment will now be weighted at 25% each. This does not apply to the following CKPGs, which are not assessed on Sustainable Investment and therefore have 50% allocated to the Sustainable Revenue KPI:

- Banks
- Insurance companies
- Asset management

Best 50 Methodology Updates

07 Supplier Score:

Companies are asked to select the names of their **five** largest publicly-traded suppliers from a dropdown list. If your supplier is not listed in our database, provide the name and ISIN code in the “Manual entry” section. The supplier with the highest Overall Score out the five will be used towards the company's Supplier Score KPI. Any company that does not provide us with a list of their five largest suppliers will have their score calculated by averaging the overall scores of all publicly listed suppliers, drawn from a third-party data source.

08 Pension Fund Quality:

A component of the calculation of the Pension Fund Quality KPI has been modified as follows:

In the second step of the equation, the numerator has been updated from the fair value of the defined benefit plan assets to the projected benefit obligation. The denominator remains the number of full-time equivalent employees. This change is being made to better reflect the size of the pension.

Best 50 Methodology Updates

09

Red Flags:

Two new exclusionary screens have been added to the assessment for the 2024 Best 50:

1. Fossil fuel financing – Screens out the five largest banks by ratio of new fossil fuel-related loans to total outstanding loans (most recently available) as tracked by Banking on Climate Chaos*
2. Carbon bomb involvement – Screens out companies involved in a material operational and/or financial manner with a project considered harmful for the planet's climate as tracked by BankTrack

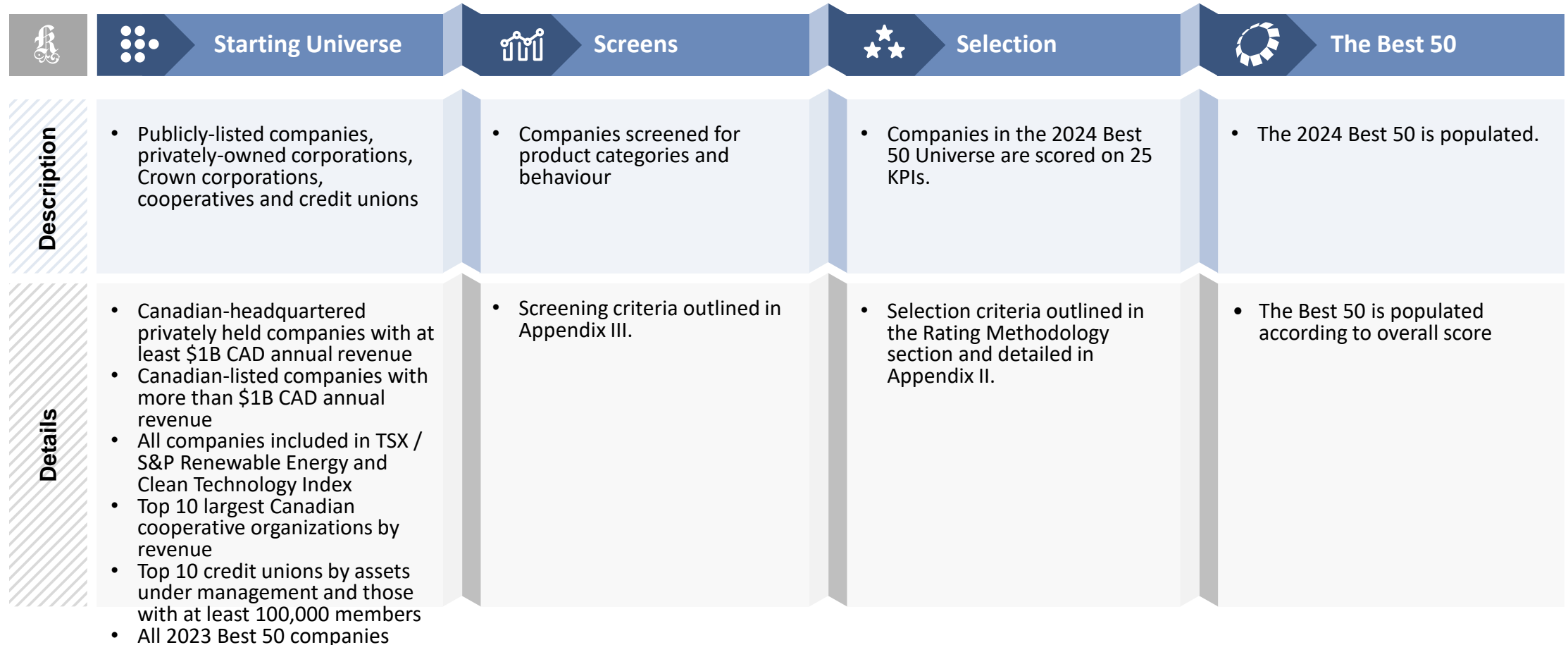
10

CKPG changes:

1. The Industrial Conglomerates CKPG was eliminated, and companies previously classified as such were reclassified to existing CKPGs based on the business of their most predominant segment.
2. The Personal and Business Services CKPG was renamed Business, Engineering and Personal Services.
3. The Engineering Construction CKPG was eliminated. Companies were reclassified into the Commercial Construction, Residential Construction or Business, Engineering and Personal Services CKPGs.
4. A new CKPG was created: Waste Management.

** If the company's most recently available Sustainable Revenue ratio is at least 10%, it is exempted from exclusion.*

Best 50 Approach



Quick Resources

2024 Best 50 Ranking



[Corporate Knights Sustainable Economy Taxonomy](#)

The complete Corporate Knights Sustainable Economy Taxonomy



[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



[Indicator Weights 2024](#)

Weights used for score calculations for each indicator for each CKPG



[Taxonomy Governance and Method Overview](#)

Overview of the governance and methodology of the Corporate Knights Sustainable Economy Taxonomy



[Weight Calculation Methodology](#)

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



[2024 Best 50 Universe](#)

Alphabetical list of all companies considered for as a part of the Best 50 ranking universe



[CKPG List](#)

Alphabetical list of all 63 Corporate Knights Peer Groups (CKPGs)



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

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



Rating Methodology

2024 Best 50 Ranking



CORPORATE KNIGHTS INC. |

Metrics



ENVIRONMENTAL

KPI	Methodology
●● Energy Productivity	Revenue (converted to USD using PPP exchange rate) / (Energy use – renewable energy generated by the company or certified RECs)
●● GHG Productivity	Revenue (converted to USD using PPP exchange rate) / GHG emissions: scope 1 & 2
●● Water Productivity	Revenue (converted to USD using PPP exchange rate) / Water withdrawn
●● Waste Productivity	Revenue (converted to USD using PPP exchange rate) / Total non-recycled waste generated
●● VOC Productivity	Revenue (converted to USD using PPP exchange rate) / VOC emissions
●● NOx Productivity	Revenue (converted to USD using PPP exchange rate) / NOx emissions
●● SOx Productivity	Revenue (converted to USD using PPP exchange rate) / SOx emissions
●● Particulate Matter Productivity	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.

Metrics

ENVIRONMENTAL

Sustainable Revenue

* 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.

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:

- Climate Bonds Taxonomy (Climate Bonds Initiative)
- EU Taxonomy for Sustainable Activities
- Sustainability Accounting Standards Board (SASB) reporting standards
- Environmental Goods and Services Sector (Eurostat)
- China Green Bond Endorsed Project Catalogue
- Green Bond Principles
- TCFD recommended climate opportunity metrics
- Other private sector rating agencies with green or sustainability taxonomy
- Industry expert consultation covering all relevant CKPG subsectors with solicited feedback on industry definition of sustainable from leading industry experts and government agencies

Sustainable Investment










Percentage of a company’s total investment (R&D, Capital expenditures, Acquisitions & Other) directed towards projects/research/companies categorized as “sustainable” according to the Corporate Knights open-source Sustainable Economy Taxonomy.



[Corporate Knights Sustainable Economy Taxonomy](#)

Please click on the link above to download the most up-to-date Sustainable Economy Taxonomy

Metrics

	KPI	Methodology
SOCIAL	 Injury Rate	Lost time incidents rate per 200,000 hours for both employees and contractors
	 Fatalities	Fatalities / total number of full-time equivalent employees
	 Employee Turnover	Number of departures (voluntary and involuntary) / total average employees
	 Paid Sick Leave	Paid sick leave (10+ days, 50%+ of pay) offered to employees in the country where the company is headquartered
	KPI	Methodology
GOVERNANCE	 Sustainability Pay Link	Mechanisms that link senior executive pay to sustainability targets
	 Gender Diversity in Executive Management	Non-male representation on executive management team
 In most Peer Groups, a small number of KPIs account for the majority of the weight.		

Metrics



KPI	Methodology
Gender Diversity on Boards	Non-male representation on board of directors
Racial Diversity Among Executives	Number of top tier executives who are members of a visible minority compared to the population of their executive peers in headquarter country
Racial Diversity on Board of Directors	Number of board directors who are members of a visible minority compared to the population of their director peers in headquarter country
Supplier Sustainability Score	The supplier with the highest CK Sustainability Score
Political Influence	This indicator tracks whether the company discloses how its own and its major trade industry/association’s policy engagements align with the Paris Agreement

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

Metrics



ECONOMIC

KPI	Methodology
CEO-Average Employee Pay	CEO compensation or highest paid Exec / average employee compensation
Percentage Tax Paid	Cash tax amount paid** / EBITDA – five-year trailing (2018-2022)
Pension Fund Quality	75% x (total DC employer contributions/ FTE employees percent-ranked* against peers) + 25% x ((projected benefit obligation/FTE employees percent-ranked* against peers) - (1-(fair value of DB plan assets/liability percent-ranked* against peers)). Note: DC contributions include 401(k), RRSPs and equivalents.
Sanction Deductions (Jan 1 – Dec 31, 2022)	Total fines, penalties and settlements / revenue

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



[KPI Data Point Definitions 2024](#)

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

* Percent-ranking using SQL's CUME_DIST function ** Where a government-owned entity is exempt from income taxes, other income-based remittances to the government such as dividends or payments in lieu of taxes are accepted. Non-income based taxes such as property taxes, corporate capital taxes, payroll taxes or other indirect taxes are not accepted



KPIs and Weighting Scheme for Each CK Peer Group



CORPORATE KNIGHTS INC. |

KPIs and Weighting Scheme



Philosophy

The Corporate Knights Best 50 rating places equal emphasis on a company's operations and its products and services from a revenue and investment perspective. The Best 50 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 investments that are included in the Corporate Knights Sustainable Taxonomy and percent-rank* those ratios against the company's peer group. We then give equal weight to the ratios and the percent ranks* in awarding up to 25 points for sustainable revenue and 25 points for sustainable investment, for a total of 50 possible points.

The other 50 points in the Best 50 are allocated to 22 ESG KPI's. Eleven of these KPI's are allocated either 33 or 46 points (depending on which CKPG Group the company is in) as follows: **CKPG Group A** – Cash Taxes Paid (3.25), CEO Pay Ratio (3.25), Pension Fund Quality (3.25), Employee Turnover (3.25), 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) and Paid Sick Leave (2.5).

CKPG Group B – Cash Taxes Paid (6.5), CEO Pay Ratio (6.5), Pension Fund Quality (6.5), Employee Turnover (6.5), 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) and Paid Sick Leave (2.5).

The remaining points (17 for CKPG Group A and 4 for CKPG Group B) are allocated to five KPI's where the weights vary by CKPG. The KPI's weighted this way include productivities for energy, carbon, waste, water and Injury Rate. (See additional description on the impact ratios and indicator weights methodology on the next slide).

In addition, penalties can be levied against overall scores for low performance on the following indicators: productivities for water, waste, VOC, NOx, SOx and PM, Cash Taxes Paid, Injury Rate as well as Fatalities. 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 Best 50 if they fail to pass our exclusionary screens. Lastly, the Political Influence KPI may earn a company 2.5 bonus points.

* Pecentrating using SQL's CUME_DIST function

KPIs and Weighting Scheme



Impact ratios and indicator weights

For each of the 63 CK Peer Groups, impact ratios are computed and used to assign weights to each of the 5 impact-weighted KPI's where it is deemed material and therefore applicable for any given CKPG. 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.

The five KPI's weights are subjected to floors and ceilings to minimize the possibility of wide differences in the weights of the various KPIs. From there, the weights are allowed to float in proportion to the impact ratios to arrive at the final weights. (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.)



[See a detailed outline of the weights calculation process](#)



[Corporate Knights Indicator Weightings](#)

See the weights for each indicator and CKPG by downloading the corresponding spreadsheet from the link above.

Policy for Changes to the Best 50 Index Methodology



The methodology to the Best 50 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 Best 50 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 Best 50 Methodology Updates section in the Overview of Corporate Knights Rating Methodology document which is published on 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 Best 50 ranking.






Appendices I - IV

2024 Best 50 Ranking



CORPORATE KNIGHTS INC. |

Appendix I: Eligibility Criteria

- 
- Canadian-headquartered privately held companies and Canadian Crown corporations with at least \$1B CAD annual revenue
 - Canadian-listed companies with more than \$1B CAD annual revenue
 - Companies included in TSX / S&P Renewable Energy and Clean Technology Index (all revenues)
 - Top 10 largest Canadian cooperative organizations by revenue
 - Top 10 credit unions by assets under management and those with at least 100,000 members
 - All 2023 Best 50 companies

Appendix II: Detailed scoring methodology



All Corporate Knights key performance indicators are linked to one or more of the United Nations Sustainable Development Goals (the UN SDGs).

Appendix II: Detailed scoring methodology

KPI	Methodology
<p>Energy Productivity</p>	<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 three-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>GHG Productivity</p>	<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 three-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>



* Percent-ranking using SQL's CUME_DIST function







Appendix II: Detailed scoring methodology

KPI	Methodology
<p>Water Productivity</p>	<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 three-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. Additionally, penalties apply to companies in CKPGs where Water Productivity was not deemed material if the company's absolute water withdrawn are in the top quartile against the whole universe. For these companies, penalties are as follows: Top quartile (largest absolute value) and no disclosure: 2.5%, second quartile 2%, third quartile 1%, bottom quartile: 0%.</p>
<p>Waste Productivity</p>	<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 three-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. Penalties for the air pollutant KPIs apply to CKPGs where the KPI has been deemed material. Additionally, penalties apply to companies in CKPGs where Waste Productivity was not deemed material if the company's absolute net waste are in the top quartile against the whole universe. For these companies, penalties are as follows: Top quartile (largest absolute value) and no disclosure: 2.5%, second quartile 2%, third quartile 1%, bottom quartile: 0%.</p>

* Percent-ranking using SQL's CUME_DIST function



Appendix II: Detailed scoring methodology

KPI	Methodology
 VOC Productivity	<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 three-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. Penalties for the air pollutant KPIs apply to CKPGs where the KPI has been deemed material. Additionally, penalties apply to companies in CKPGs where any one of the air pollutants KPI was not deemed material if the company's absolute pollutant emissions is in the top quartile against the whole universe. For these companies, penalties are as follows: Top quartile (largest absolute value) and no disclosure: 2.5% penalty, second quartile 2%, third quartile 1%, bottom quartile: 0%.</p>
 NOx Productivity	
 SOx Productivity	
 Particulate Matter Productivity	
 Percentage Tax Paid	
 CEO-Average Employee Pay Ratio	<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.) by the total number of employees. Each company's CEO to Average Employee Pay ratio 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.</p>



* Percent-ranking using SQL's CUME_DIST function ** Where a government-owned entity is exempt from income taxes, other income-based remittances to the government such as dividends or payments in lieu of taxes are accepted. Non-income based taxes such as property taxes, corporate capital taxes, payroll taxes or other indirect taxes are not accepted











Appendix II: Detailed scoring methodology

KPI	Methodology
<p>Pension Fund Quality</p>	<p>In the first step, the sum of the company’s contribution to the 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 projected benefit obligation 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: $(0.75 \times A) + 0.25(B - (1 - C))$.</p>
<p>Supplier Sustainability Score</p>	<p>Each company’s five largest publicly listed supplier by total spend. The supplier with the highest score using the Best 50 methodology (excluding the Supplier Sustainability Score KPI) is weighted by 2.5% and the resulting figure is the company’s Supplier Sustainability Score.</p>










* Percent-ranking using SQL's CUME_DIST function

Appendix II: Detailed scoring methodology

KPI	Methodology	
 Injury Rate	<p>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. Additionally, penalties apply to companies in CKPGs where Injuries was not deemed material if the company's lost time injury rate is in the top quartile against the whole universe from largest to smallest ratio. For these companies, penalties are as follows: Top quartile (i.e. largest ratio) and no disclosure receives 2.5% penalty, second quartile 2%, third quartile 1%, bottom quartile and no disclosure: 0%.</p>	
 Fatalities	<p>Each company receives a penalty based on the percent-rank of the absolute number of fatalities against that of all companies within the CK coverage universe. Zero fatalities receive no penalty. Top quartile results with at least one fatality receives a 1% deduction, 2nd quartile results in 2% deduction, 3rd quartile in 3% deduction and bottom quartile results in a 5% deduction. This KPI applies to all CKPGs.</p>	
 Employee Turnover	<p>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.</p>	
 Executive Gender Diversity	<p>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.</p>	
 Board Gender Diversity	<p>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.</p>	

* Percent-ranking using SQL's CUME_DIST function

Appendix II: Detailed scoring methodology

KPI	Methodology	
 Racial Diversity Among Executive Management	<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>	
 Racial Diversity on Boards	<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>	
 Paid Sick Leave	<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>	 

* Percent-ranking using SQL's CUME_DIST function

Appendix II: Detailed scoring methodology

KPI	Methodology
<p>Sustainability Pay Link</p>	<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"> 0% - No pay link 1% - Indicates existence of a CEO pay link but does not state the % of total variable pay that is tied to the pay link Up to an additional 4%, where a company indicates the existence of a CEO pay link AND discloses: <ol style="list-style-type: none"> The monetary amount earned by the CEO that is tied to the pay link, and; The CEO's total variable (short-term and long-term) The resulting percentage (A/B) is percent-ranked* against that of all companies in the CK coverage universe, then multiplied by 4%.
<p>Sanctions Deduction</p>	<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, 2022 to December 31, 2022 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 the whole 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>



* Percent-ranking using SQL's CUME_DIST function

Appendix II: Detailed scoring methodology

KPI	Methodology
<p>Political Influence</p>	<p>As a bonus of 2.5%, this indicator tracks whether the company discloses how its own and its major trade industry/association’s policy engagements align with the Paris Agreement? Link to public document must be provided to receive the bonus. All four of the following aspects need to be present in public disclosures to obtain the bonus:</p> <ul style="list-style-type: none"> - Description of processes to ensure alignment of its engagement activities with the Paris goals and what is done in cases of non-alignment - Description of its direct engagement with policy makers - For engagement with policy makers, evidence that the company has assessed alignment with Paris goals and in case of non-alignment or exceptions, describes steps to achieve alignment - Description of its engagement through trade associations - For engagement through trade associations, evidence that the company has assessed alignment with Paris goals and in case of non-alignment or exceptions, describes steps to achieve alignment
<p>Sustainable Revenue</p>	<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 percent rank are equally weighted in the calculation of the contribution towards the overall score (known as the 50/50 rule).</p>



* Percent-ranking using SQL's CUME_DIST function

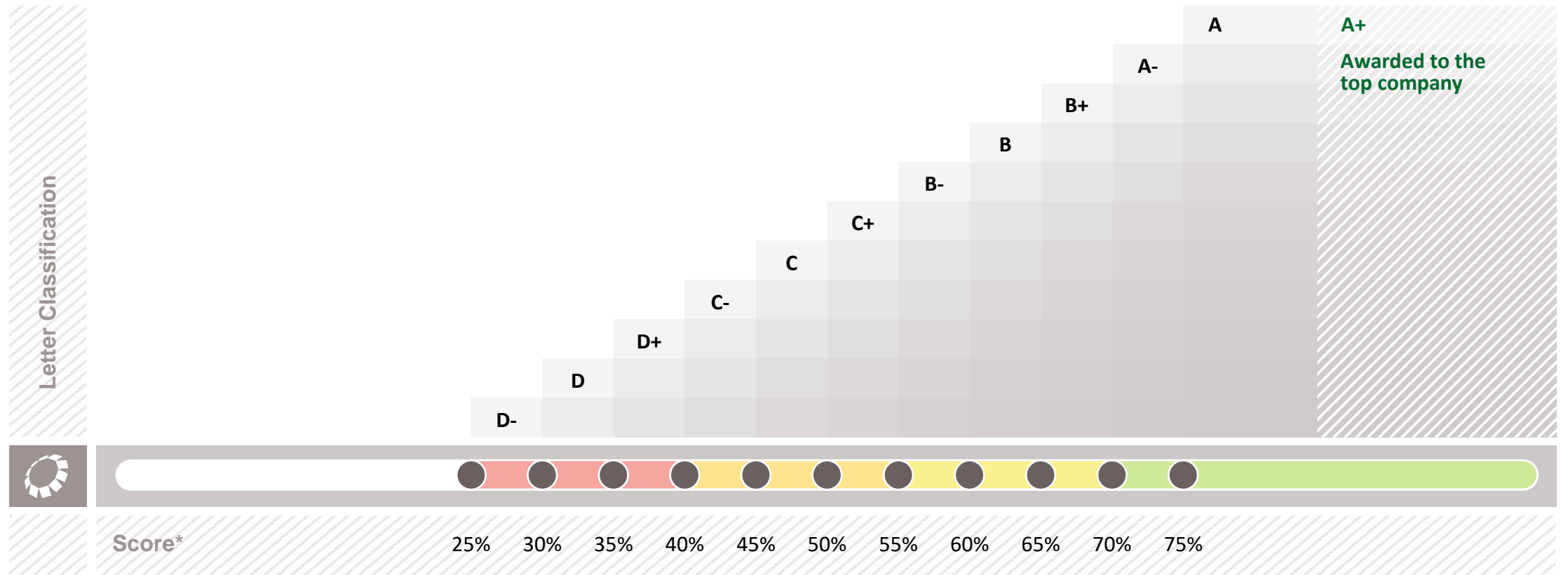
Appendix II: Detailed scoring methodology

KPI	Methodology
<p>Sustainable Investment</p>	<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 percent 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"> • Total capital expenditures (investments in plant, property, and equipment or similar) consistent with the Corporate Knights Sustainable Taxonomy. Found in the cash flow statement. • Total Research and Development (R&D) consistent with the Corporate Knights Sustainable Taxonomy. Found in the income statement. • Any completed acquisitions (cash amount), joint-ventures, or equity investments in companies or funds (not counted under Sustainable CapEx or Sustainable R&D) consistent with the Corporate Knights Sustainable Taxonomy. Generally found in financial statement notes. <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>












* Percent-ranking using SQL's CUME_DIST function

Appendix II: Detailed scoring methodology












*These scores do not reflect absolute performance, but reflect a company's performance on our KPIs, relative to other companies in their peer group.






Appendix III: Exclusionary Screens

Metric	Description
 Access to medicine laggards	Lagging pharmaceutical companies in the bottom quartile of the Access to Medicine ranking.
 Access to nutrition laggards	Lagging food companies in the bottom quartile of the Access to Nutrition index.
 Adult entertainment	Companies operating in the adult entertainment industry based on Motley Fool, Wespath, Sin Stocks, and RedLightNetwork 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 voting record (bottom quartile).
 Carbon bomb involvement	Companies involved in a material operational and/or financial manner (10%+) with a project considered harmful for the planet's climate as tracked by BankTrack.
 Cement carbon laggards	Companies in the cement industry that were divested by Norges Bank Investment Management (NBIM) 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 NZ SuperFund.
 Controversial weapons	Companies involved with cluster munition, anti-personnel mine, and nuclear weapons manufacturing that were divested by NBIM and NZ SuperFund.

Appendix III: Exclusionary Screens

Metric	Description
 Conventional weapons	The Top 25 weapons producers as tracked by Stockholm International Peace Research Institute (SIPRI) for companies that earn more than 50% of revenue from weapons.
 Deforestation & palm oil laggards	Companies engaging in deforestation as deemed by Chain Reaction Research or NBIM. List of companies obtained from Deforestation Free Funds, which NBIM has divested from.
 Energy	Companies that operate in the fossil fuel industry with less than 50% of new investments (most recently available) in themes consistent with decarbonization.
 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 Project of the American Friends Service Committee and that demonstrate involvement in the various aspects of the prison industry.
 Fossil fuel financing	The five largest banks by ratio of new fossil fuel-related loans to total outstanding loans (most recently available) as tracked by Banking on Climate Chaos. If the company's most recently available Sustainable Revenue ratio is at least 10%, it is exempted from exclusion.
 Gambling	Companies that operate in the gambling industry.
 Gross corruption violations	Companies that have been divested from by NBIM due to gross corruption violations.
 Sanctions	Companies whose ratio of fines, penalties, or settlements / revenue for the last 12 months exceeds 1% are also excluded.

Appendix III: Exclusionary Screens

Metric	Description
 Government sanctions	Companies on the Canadian or U.S. government sanctions list for investors.
 Oil sands laggards	Oil sands companies that were divested by NBIM.
 Severe environmental damage	Companies that have caused severe environmental damage and have been excluded by NBIM.
 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 NBIM.
 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 AND <ul style="list-style-type: none"> • has no plans for expansion of coal AND • 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, and those excluded by NBIM and NZ SuperFund.

Appendix V: CKPG Groups

CKPG Group A				
Aluminum manufacturing	Food and beverage manufacturing	Medical equipment manufacturing	Personal products (retail chemical)	Semiconductor and electronic components manufacturing
Appliances and lighting fixtures manufacturing	Forest products	Metal and coal mining	Pesticide and fertilizer manufacturing	Smelters and steel making
Automobile retail	Freight transport, all modes	Metal products manufacturing	Pharmaceutical manufacturing	Steel products
Basic inorganic chemicals and synthetics	Furniture and general manufacturing	Mining industry support	Plastic and rubber product manufacturing	Telecom providers
Battery manufacturing	Glass and ceramics	Natural gas transmission and distribution	Power generation	Telephones and telecom equip manufacturing
Cars and trucks manufacturing, including parts	Grocery stores	Non-metallic mining	Power transmission and distribution	Textiles and clothing manufacturing
Cement, lime and concrete	Health care	Non-road transport equipment manufacturing	Real estate and leasing	Tobacco
Commercial building construction	Hotels and entertainment venues	Non-store retailers	Refining, petrochemicals and basic organic chemicals	Transit and ground transportation
Computers and peripherals manufacturing	HVAC equipment manufacturing	Oil and Gas production	Residential construction	Waste Management
Electrical equipment manufacturing	Instrumentation and other electronic manufacturing	Packaging	Restaurants	Water and sewage treatment
Farming and fishing	Machinery manufacturing	Passenger airlines	Retail, except grocery and auto	Wholesale trade and warehousing

Appendix V: CKPG Groups

CKPG Group B

Asset management

Banks

Business, engineering and personal services

Data processing, hosting services

Education

Insurance companies

IT services except telecom and hosting

Scientific R&D

Appendix VI: Corporate Knights Notice and Disclaimer

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