

MSCI Sustainable Impact Metrics

Methodology

MSCI ESG Research

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Summary of Methodology Updates

We review and update methodology documents on an ongoing basis to reflect product enhancements, process improvements, and model solutions to evaluating emerging issues that we identified and discussed with the market participants. Prior to implementing any significant adjustments to methodologies, we conduct client consultations on the model changes. We then communicate any changes and enhancements to the models to clients.

Recent key enhancements to MSCI Sustainable Impact Metrics include:

1. 2021 – Consistent with a gradual transition from fossil fuel to sustainable energy sources, starting in 2021 we no longer consider Natural Gas Co-generation sub-category as an eligible sustainable activity under the Alternative Energy category.
2. 2020 - Addition of new Sustainable Impact categories: Sustainable Agriculture and Connectivity
3. 2020 - Granularization of Environmental Solutions revenue data

Introduction

MSCI Sustainable Impact Metrics is designed to identify companies that derive revenue from products or services with positive impact on the society and the environment. The Sustainable Impact Metrics are comprised of six Environmental Impact categories and seven Social Impact categories arranged by theme (see Exhibit 1).

Exhibit 1 - MSCI Sustainable Impact Metrics Taxonomy

Pillar	Themes	Categories
Environmental Impact	Climate Change	Alternative energy Energy efficiency Green building
	Natural Capital	Sustainable water Pollution prevention and control Sustainable agriculture
Social Impact	Basic needs	Nutrition Major disease treatments Sanitation Affordable real estate
	Empowerment	SME finance Education Connectivity - Digital divide

Under each of the actionable social and environmental impact themes, MSCI ESG Research LLC has identified specific categories of products and services that it has determined companies can offer as potential solutions to environmental and social challenges. This taxonomy of impact solutions draws from MSCI ESG Research’s sector expertise, as well as client feedback and discussions with stakeholders including academics, consultants, and civil society through MSCI ESG Research’s Thought Leaders Council.¹

All companies in the coverage universe already researched will show a value populated for revenue figures. A revenue figure of zero means we found no evidence of involvement. Companies with blank values are either still in queue for research or outside the coverage universe.

Since 2020, we provided more granular revenue data for 35 Environmental Impact sub-categories (Exhibit 2).

Exhibit 2 - Granularization of Environmental Impact Metrics Revenue Data

CATEGORY	CLIMATE CHANGE			NATURAL CAPITAL		
	Alternative Energy	Carbon & Energy Efficiency	Green Building	Sustainable Water	Pollution Prevention	Sustainable Agriculture
SUB-CATEGORY	<ul style="list-style-type: none"> Biomass/ Biogas Biofuels Batteries / Energy Storage (alternative) Fuel Cells Solar Wind Small Hydro Wave Tidal Geothermal Waste-to-energy 	<ul style="list-style-type: none"> LED/CFL Lighting Demand-side Management Smart Grid Energy Efficient Industrial Automation Electric/ Hybrid vehicles Clean Transport Infrastructure Insulation Superconductors Batteries / Energy Storage (conventional) IT Optimization 	<ul style="list-style-type: none"> Property Owners & Managers Green Building Construction & Consultancy 	<ul style="list-style-type: none"> Wastewater Treatment Water Recycling Equipment & Services Desalination Drought-Resistant Seeds Smart Metering Devices Water Infrastructure & Distribution Rainwater Harvesting 	<ul style="list-style-type: none"> Conventional Pollution Control Low Toxicity / VOC Reuse & Recycling Waste Treatment Environmental Remediation 	<ul style="list-style-type: none"> Material Certification

The MSCI Sustainable Impact Metrics framework could be leveraged to assess the extent companies' products and services address at least one of the major social and environmental challenges, as defined, for example, by the UN Sustainable Development Goals (UN SDGs). The MSCI Sustainable Impact Metrics framework is also used for assessing alignment with other recognized frameworks, such as the EU Taxonomy for Sustainable Activities.

¹ MSCI ESG Research LLC “MSCI ESG Thought Leadership Council”, 2015

Coverage Universe

As of July 2021, MSCI ESG Sustainable Impact Metrics cover more than 10,200 corporate equity and fixed income issuers, including constituents of the MSCI ACWI Investable Market Index (IMI).

A factor indicates if an issuer is within the Sustainable Impact Metrics coverage universe. This factor is available for delivery in datafeeds.

Factor Name	Column Header	Description
Sustainable Impact - In Standard Coverage Universe	SUSTAINABLE_IMPACT_COVERED	Issuer is in the standard Sustainable Impact coverage universe.

Research Process

Our team includes content specialists dedicated to producing research on Sustainable Impact Metrics. These specialists are responsible for identifying involvement and estimate the relevant percentage of revenue for the most recently completed fiscal year.

This review involves an examination of company regulatory filings, annual reports, company websites, and third-party sources. Analysts assess the company’s product pipeline and only consider revenues coming from products that match the Sustainable Impact categories outlined above.

A factor indicates if an issuer has gone through the research process. This factor is available for delivery in datafeeds.

Factor Name	Column Header	Description
Sustainable Impact - Research Completed	SUSTAINABLE_IMPACT_RESEARCHED	Issuer is in the standard Sustainable Impact coverage universe, has been researched and has Environmental, Social and Sustainable Impact revenues.

Ongoing Monitoring and Update Cycle

We regularly review all companies in the coverage universe. These updates involve a multi-step process:

- **Ongoing review and identification of Sustainable Impact categories:** Companies are reviewed throughout the year, based on fiscal-year reporting cycles.
 - Constituents of the MSCI ACWI Index are reviewed within one quarter of their annual filings.
 - The rest of the coverage universe is reviewed on a rolling schedule, within 12 months of the issuers' annual filings.
- **New constituents to the MSCI ACWI Index are processed within one quarter of their Index inclusion.** All other additions are processed within two quarters of when they enter the index or coverage.

Note: Occasionally the assessment of companies may require an additional review and publication approval by the MSCI ESG Impact and Screening Methodology Committee, which could impact the timing of publication.

Corporate Actions

We review and incorporate corporate actions to the research. Corporate events include acquisitions, consolidations, mergers, name changes, public offerings, and spinoffs.

- **Spin-offs:** both the company that spins off operations as well as the new business entity are assessed to estimate the extent of their involvement in covered categories (if any).
 - Constituents of MSCI ACWI Index are researched within one quarter of their index inclusion.
 - All other entities are researched within two quarters of the transaction completion.
- **Mergers and Acquisitions:** We assess involvement in covered categories for merged entities, acquiring companies and acquired companies.
 - Constituents of MSCI ACWI Index are assessed within one quarter of the transaction completion.
 - All other entities are researched independently within two quarters of the transaction completion.
- **Name changes:** The name of the company in our systems will reflect the new name; however, the body of the company's report may continue to reflect the old name until the company undergoes scheduled data review.

Publishing Schedule

We follow a weekly schedule to publish updates to companies that have already been reviewed. There will be instances where a few company updates may be published outside of that weekly timetable. All updates will typically be available in ESG Manager within 24 to 48 hours after publication.

Sources

We use a wide range of information tools and sources, including:

- Company websites,
- Company annual reports and regulatory filings,
- Direct communication with company,
- Government agencies and disclosures,
- Financial data providers,
- Media search services, and
- Nongovernmental organization (NGO) reports and websites.

Company Communication

We seek input from every company that is included in any of the Sustainable Impact categories when its information is updated, at a minimum of once a year. Where we have the e-mail contact information, the companies are invited to review MSCI ESG Research’s assessments and reports, and to provide updates, clarifications, and comments. Information provided by companies during this process is reviewed by analysts and incorporated into the research as appropriate.

Our analysts also contact companies on all themes throughout the year when it is necessary to confirm involvement, the nature of the involvement or the revenue derived from the theme.

Revenue

We provide company revenue percentages for each category and theme. Where the revenue for a covered category is not disclosed by a company and is not available through other publicly available sources, a revenue estimate is supplied.

Revenue Estimation Process

When companies do not report exact revenue figures for products and services in the MSCI Sustainable Impact framework, we provide an estimate of the extent of companies' involvement in the subject activity. The estimation model incorporates disclosed data whenever available through company reports and additional sources. In the absence of information indicating otherwise, assumptions are made that product lines are of equal weight in terms of revenue contribution. For details of the revenue estimation model and practical examples of revenue estimation, please see the Appendix to this document.

Revenue Ranges

In addition to the estimated revenue figures for each covered category, MSCI ESG Research also categorizes the company's involvement in the two pillars with three revenue ranges:

- 1 to 19.99%
- 20 to 49.99%
- 50 to 100%

Capturing evidence and no evidence of involvement

In the event that there is no conclusive evidence of either continued involvement or a discontinuation of involvement in a subject activity and the company is not subject to corporate action suggesting change in the business structure, we retain a previously established revenue estimate for up to three years. After the three-year period, if there is no evidence of continued involvement in a subject activity, revenue for the subject category will be changed zero.

If we determine conclusively that a company is not involved or is no longer involved in activities that generate revenue in a MSCI Sustainable Impact Metrics category, the revenue for that category will be set at zero.

In the absence of either disclosed data or any basis for revenue estimation, we attempt as a minimum to capture evidence of companies' involvement in sustainable solutions. Such involvement is captured by assigning a very small percentage of a revenue (0.05%) to the category where we can find evidence of involvement but are unable to provide an estimate.

Treatment of Members in the Corporate Hierarchy

Parent companies of majority-owned subsidiaries with Involvement:

Companies that own >50% of a subsidiary involved in any Sustainable Impact category inherit the involvement of the child company (including category and revenue). In these cases, revenue attributed to the parent company may be adjusted

based on the percentage of revenue the child company derives from a category, the percentage of stake held by the parent, and the parent's other revenue-generating activities.

For example, Company A holds a majority ownership (60%) in Company B, which has solar farm operations and generated 11.50% of revenue from such activities, represented under the Alternative Energy category and Solar subcategory. Company A inherits Company's B involvement in addition to its own involvement in the same or any other category, if any. In this case, Company A's revenue would be 6.9% under Alternative Energy and Solar categories.

In many cases, parent companies already consolidate the revenues of their subsidiaries into their financial statements and already accounting for the various ownership stakes of these subsidiaries. So, in the example above, Company A may already be reporting revenue for "solar power segment" as 6.9%, in which case MSCI ESG Research will not manually compute the revenue figure.

Subsidiary Mapping

Subsidiary mapping is a feature found within the ESG Manager platform that automatically copies the involvement information from an involved parent to subsequent majority-owned subsidiaries. Note that subsidiary mapping will not copy involvement if the subsidiary issues equities or already has been researched by MSCI ESG Research.

Quality Assurance

Initial company research and analysis is followed by a rigorous quality assurance process. Data accuracy and company profiles are peer-reviewed, then sent to content leads for final approval. In specific cases in which a company's business activity is not clearly defined by MSCI ESG Research's methodology and there is no precedent, the case is escalated to the Head of Screening Research. Cases that require further interpretation or an update to the methodology are brought to the MSCI ESG Impact and Screening Methodology Committee for resolution.

MSCI ESG Impact and Screening Methodology Committee

The MSCI ESG Impact and Screening Methodology Committee consists of senior members of MSCI ESG Research and MSCI ESG Data Management. For the Sustainable Impact assessment, the Committee typically reviews:

- changes in the revenue estimations for high-profile companies that are widely held by MSCI ESG Research's clients;
- decisions regarding an interpretation or update of the methodology.

In some instances, cases may be escalated to the committee governing all MSCI ESG Research methodological documents and decisions, the MSCI ESG Methodology Committee.

We observe a 30-day client notification period before making methodology changes and other changes with known impacts to MSCI ESG Research’s ESG Manager and Data Feed clients. Please note that MSCI ESG Research reserves the right to make final decisions on all companies and to interpret and update the methodology as necessary.

Categories

Alternative Energy

Alternative Energy is one of the themes under ‘Climate Change’. This category includes products and services that support the transmission, distribution and generation of renewable energy and alternative fuels to reduce carbon and pollutant emissions in supporting affordable and clean energy to combat climate change.

Inclusions

- Renewable energy sources include wind, solar, geothermal, biomass, small scale hydro (25 MW), waste-to-energy and wave tidal.
- Alternative energy sources include biodiesel, biogas, and cellulosic ethanol.
- Other alternative energy technologies include batteries and energy storage devices for alternative energy and fuel cells.

Table 1 - Examples of Products and Services Typically Included Under the Alternative Energy Category

Products	Services
Solar panels	Electricity generation from geothermal power
Solar inverters	Electricity generated from photovoltaic power plants
Windmills	Construction of biomass plants
Wind Towers	Transmission and distribution of renewable energy
Biofuel	Construction of waste incineration plants that generate electricity
Geothermal turbines	
Tidal Turbines	
Batteries supporting renewable energy	

Source: MSCI ESG Research

Exclusions

- Large scale hydroelectric plants (>25 MW installed capacity)
- Biomass coming from virgin palm oil
- Financing and investing on renewable energy
- Site assessment for wind and solar farms
- Landfill or incineration waste treatment projects without a specific waste-to-energy component

Factors

Summary

Factor Name	Column Header	Description
Alternative Energy - Maximum Percentage of Revenue	CT_ALT_ENERGY_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from products, services, or infrastructure projects supporting the development or delivery of renewable energy and alternative fuels.
Alternative Energy Solutions - Source	EM_PRAC_ALT_ENRG_SOURCE	Alternative Energy Solutions - Source
Alternative Energy Solutions - Revenue Year	CT_ALT_ENERGY_REV_YEAR	The fiscal year of the company's alternative energy involvement.
Renewable Power Generation - Maximum Percentage of Revenue	CT_ALT_ENERGY_RENEWABLE_POWER_GEN_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from the generation of renewable energy (solar, wind, small hydro, wave tidal, geothermal, and waste to energy).
Renewable Power Equipment & Services - Maximum	CT_ALT_ENERGY_RENEWABLE_POWER_EQUIP_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from products, services, or infrastructure projects supporting the development or delivery of renewable

Percentage of Revenue		energy (solar, wind, small hydro, wave tidal, geothermal, and waste to energy).
Other Alternative Energy – Maximum Percentage of Revenue	CT_ALT_ENERGY_OTHER_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from products, services, or infrastructure projects supporting the development or delivery of other alternative sources of energy (biomass, biofuels, alternative energy storage and fuel cells).

Subcategories

Factor Name	Column Header	Description
Solar - Maximum Percentage of Revenue	CT_ALT_ENERGY_SOLAR_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from solar power.
Wind - Maximum Percentage of Revenue	CT_ALT_ENERGY_WIND_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from wind power.
Small Hydro - Maximum Percentage of Revenue	CT_ALT_ENERGY_SMALL_HYDRO_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from small hydro power.
Wave Tidal - Maximum Percentage of Revenue	CT_ALT_ENERGY_WAVE_TIDAL_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from wave tidal power.
Geothermal - Maximum Percentage of Revenue	CT_ALT_ENERGY_GEOTHERMAL_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from geothermal power.
Waste to Energy - Maximum Percentage of Revenue	CT_ALT_ENERGY_WASTE_TO_ENERGY_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from waste to energy power.
Biomass - Maximum Percentage of Revenue	CT_ALT_ENERGY_BIOMASS_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from biomass power.

Biofuel - Maximum Percentage of Revenue	CT_ALT_ENERGY_B IOFUEL_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from non-virgin source biofuels.
Alternative Energy Storage - Maximum Percentage of Revenue	CT_ALT_ENERGY_S TORAGE_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from storage technology for alternative or renewable energy.
Fuel Cells - Maximum Percentage of Revenue	CT_ALT_ENERGY_F UEL_CELLS_MAX_R EV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from fuel cells.

Energy Efficiency

Energy Efficiency is one of the themes under 'Climate Change'. This category includes products, and services that support the maximization of productivity in labor, transportation, power, and domestic applications with minimal energy consumption to ensure universal access to affordable, reliable, and modern energy services.

Inclusions

- Products and services that improve business and industrial operations and IT systems include energy-efficient industrial automation and IT optimization services and infrastructure.
- Technologies and systems that increase the efficiency of power usage include demand-side management, smart grid, LED and CFL lighting, insulation, superconductors, and batteries and energy storage devices for other sustainable applications.
- Products that focus on help reduce fuel consumption and improve transport infrastructure include hybrid/electric vehicles, charging stations for hybrid/electric vehicles and improved traffic systems.

Table 2 - Examples of Products and Services Typically Included Under the Energy Efficiency Category

Products	Services
Building automation	LED streetlight installation services
LED lightbulbs	Railway installation and construction
Electric and hybrid vehicle units	Smart grid services
Batteries for hybrid/electric vehicles	Installation of insulating materials for homes
Solar and geothermal powered water heaters	Telematics services
Insulation building materials	Provider of electric/hybrid car rental services.
Infrastructure as a Service (IaaS)	
Platform as a Service (PaaS)	

Source: MSCI ESG Research

Exclusions

- Corporate operational energy efficiency efforts, such as efficiency gains in manufacturing, transporting, or distributing standard products or services.
- Energy efficient components of finished goods

- Energy efficient consumer devices (e.g. electronics) and appliances (e.g. refrigerators)
- Cloud computing services or technologies that only offers software as a service (SaaS)
- Building and industrial automation technologies that do not have notable energy efficiency benefits

Factors

Summary

Factor Name	Column Header	Description
Energy Efficiency - Maximum Percentage of Revenue	CT_ENERGY_EFF_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from products, services, infrastructure, or technologies that proactively address the growing global demand for energy while minimizing impacts to the environment.
Energy Efficiency Solutions - Source	EM_ENRG_EFF_SO URCE	Energy Efficiency Solutions - Source
Energy Efficiency Solutions - Revenue Year	CT_ENERGY_EFF_R EV_YEAR	The fiscal year of the company's energy efficiency involvement.
Electric/Hybrid Vehicles - Maximum Percentage of Revenue	CT_ENERGY_EFF_E LECTRIC_VEH_M AX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from zero-emission (electric) or hybrid vehicles, including essential components.

Subcategories

Factor Name	Column Header	Description
LED/CFL Lighting Solutions - Maximum Percentage of Revenue	CT_ENERGY_EFF_L ED_CFL_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from LED/CFL lighting.

Demand-side Mgmt Solutions - Maximum Percentage of Revenue	CT_ENERGY_EFF_D EMAND_MGMT_M AX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from demand-side management technology.
Smart Grid Solutions - Maximum Percentage of Revenue	CT_ENERGY_EFF_S MART_GRID_MAX_ REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from smart grid technology like remote grid monitoring and automated load balancing.
Industrial Automation Solutions - Maximum Percentage of Revenue	CT_ENERGY_EFF_I NDUSTRL_AUTOM_ MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from energy-efficient industrial automation.
Zero Emission Vehicles - Maximum Percentage of Revenue	CT_ENERGY_EFF_Z ERO_EM_VEH_MAX_ _REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from zero-emission (electric) vehicles, including essential components.
Hybrid Vehicles - Maximum Percentage of Revenue	CT_ENERGY_EFF_H YBRID_VEH_MAX_R EV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from hybrid vehicles, including essential components.
Clean Transport Infrastructure Solutions - Maximum Percentage of Revenue	CT_ENERGY_EFF_C LN_TRAN_INFRA_ MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from clean transport infrastructure like electrified mass rapid transit.
Insulation Solutions - Maximum Percentage of Revenue	CT_ENERGY_EFF_I NSULATION_MAX_ REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from insulating materials, including heat, fire, and sound insulation.
Superconductors - Maximum Percentage of Revenue	CT_ENERGY_EFF_S UPERCONDUCTOR S_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from superconductors, which

Percentage of Revenue		help reduce losses in electricity transmission.
Other Energy Storage - Maximum Percentage of Revenue	CT_ENERGY_EFF_STORAGE_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from storage technology for other uses aside from alternative energy.
IT Optimization Services & Infrastructure Solutions - Maximum Percentage of Revenue	CT_ENERGY_EFF_OPT_INFRA_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from IT optimization services & infrastructure, like virtualization, data center optimization, cloud platform enablement and other similar technology.

Green Building

Green Building is one of the themes under 'Climate Change'. This includes design, construction, redevelopment, retrofitting, or acquisition of green-certified properties to promote mechanisms for raising capacity for effective climate change mitigation and adaptation.

Inclusion

- Ownership of properties, facilities and buildings designed and built according to environmental or sustainable standards and certified by third parties.
- Construction of green or sustainable properties, facilities, or buildings, which may also include retrofitting or redevelopment of non-certified properties to comply with green building standards.
- Provision of consultancy services that aid in the green building certification of properties, facilities, or building.

Table 3 - Examples of Green Building Certifications

Green building certifications
LEED (United States)
BREEAM (United Kingdom)
Green Star (Australia)
Green Mark (Singapore)
Energy Star (United States)
Pearl Rating System for Estidama (United Arab Emirates)
MINERGIE (Switzerland)
Building-Housing Energy-Efficiency Labeling System (Japan)
BEAM (Hong Kong)
BEE (India)
BOMA (Canada)
CALENER (Spain)
CASBEE (Japan)
China Tree Star (China)
Development Bank Japan (Japan)
DGNB (Germany)
Green Building Index (Malaysia)
Green Garage Certification (United States)
Green Globe (United States)
Green Globes (Canada)
Green Key (Denmark)

Green Standard (Russia)
 Green Star (Australia)
 Green Star SA (South Africa)
 GRIHA (India)
 HQE (France)
 Homestar (New Zealand)
 IGBC (India)
 Living Building Challenge (United States)
 NABERS (Australia)
 Nordic Ecolabelling (Denmark, Finland, Iceland, Norway, Sweden)
 Qualiverde (Brazil)
 Superior Energy Performance (United States)
 Built Green (United States)
 GreenPoint (United States)
 Trakhees (United Arab Emirates))

Source: MSCI ESG Research

Exclusions

- Building materials, equipment or supplies that are included in the scope of other Sustainable Impact Metrics categories. Examples include solar panels, energy efficient lighting, advanced materials used in construction, smart grids, etc. These are covered in other categories.
- Buildings that are only pre-certified

Factors

Factor Name	Column Header	Description
Green Building - Maximum Percentage of Revenue	CT_GREEN_BLDG_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from design, construction, redevelopment, retrofitting, or acquisition of 'green' certified properties – subject to local green building criteria.
Green Building Solutions - Source	EM_GREEN_BULD_SOURCE	Green Building Solutions - Source
Green Building Solutions - Revenue Year	CT_GREEN_BLDG_REV_YEAR	The fiscal year of the company's green building involvement.

Subcategories

Factor Name	Column Header	Description
Property Ownership & Mgmt Solutions- Maximum Percentage of Revenue	CT_GREEN_BLDG_PROP_MGMT_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from the operation and management of 'green-certified' properties – subject to local green building criteria.
Green Construction & Consultancy Solutions- Maximum Percentage of Revenue	CT_GREEN_BLDG_CONSTR_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from developing and constructing 'green-certified' properties – subject to local green building criteria.

Sustainable Water

Sustainable Water is one of the themes under ‘Natural Capital’. This includes products, services, infrastructure projects and technologies that resolve water scarcity and water quality issues, through minimizing and monitoring current water demand, improving the quality and availability of water supply to improve resource management in both domestic and industrial use.

Inclusions

- Products and projects that aim to address water supply and access include water infrastructure projects and distribution, water recycling technologies and smart metering devices.
- Technologies and services that use alternative water sources include desalination and rainwater harvesting systems.
- Products that improve the water efficiency and drought resiliency of agricultural operations include drought resistant seeds.

Table 4 - Examples of Products and Services Typically Included Under the Sustainable Water Category

Products	Services
Specialized wastewater treatment chemicals	Desalination services
Smart metering devices	Maintenance of current water distribution infrastructure
Drought resistant seeds	Construction of wastewater plants
Wastewater filters	Construction of stormwater systems
Desalination equipment	

Source: MSCI ESG Research

Exclusions

- Distribution of drinking water without measurable improvements to water quality or availability / Water treatment for potability
- Generic water treatment chemicals such as hydrogen peroxide

Factors

Summary

Factor Name	Column Header	Description
Sustainable Water - Maximum Percentage of Revenue	CT_SUST_WATER_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from products, services, and projects that attempt to resolve water scarcity and water quality issues, including minimizing and monitoring current water use and demand increases, improving the quality of water supply, and improving the availability and reliability of water.
Sustainable Water Solutions - Source	EM_SUST_WATER_SOURCE	Sustainable Water Solutions - Source
Sustainable Water Solutions - Revenue Year	CT_SUST_WATER_REV_YEAR	The fiscal year of the company's sustainable water involvement.

Subcategories

Factor Name	Column Header	Description
Waste Water Treatment Solutions - Maximum Percentage of Revenue	CT_SUST_WATER_WASTE_WATER_TR_TMT_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from waste water treatment technology or services.
Water Recycling Equipment & Services - Maximum Percentage of Revenue	CT_SUST_WATER_RECYCLING_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from water recycling technology or services.
Desalination Solutions - Maximum Percentage of Revenue	CT_SUST_WATER_DESALINIZATION_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from desalination (also called desalination).

Drought Resistant Seeds - Maximum Percentage of Revenue	CT_SUST_WATER_DROUGHT_RES_SEEDS_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from drought-resistant seeds.
Smart Metering Devices - Maximum Percentage of Revenue	CT_SUST_WATER_SMART_METER_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from smart-metering devices.
Water Infrastructure & Distribution Solutions - Maximum Percentage of Revenue	CT_SUST_WATER_INFRA_DIST_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from improving or enhancing water infrastructure & distribution.
Rainwater Harvesting Solutions - Maximum Percentage of Revenue	CT_SUST_WATER_RAINWATER_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from rainwater harvesting technology.

Pollution Prevention & Control

Pollution Prevention & Control is one the themes under ‘Natural Capital’. This category includes products, services, infrastructure projects and technologies that reduces volume of waste materials through recycling, minimizes introduction of toxic substances, and offers remediation of existing contaminants such as heavy metals and organic pollutants in various environmental media to significantly address pollution in all levels and its negative effects.

Inclusions

- Technologies and systems that aim to reduce pollution include conventional pollution control devices.
- Services and infrastructure projects that address the growing waste problem and environmental pollutants include recycling, environmental remediation, and waste treatment.
- Sustainable alternative materials for buildings and homes include low toxicity/VOC products.

Table 5 - Examples of Products and Services Typically Included Under the Pollution Prevention & Control Category

Products	Services
Diesel exhaust fluid	Remediation services
Selective catalytic reduction units	Recycling services
Low VOC paints and coating materials	Hazardous waste treatment
Recycling units	Construction of carbon adsorbers and electrostatic precipitators
	Oil spill removal

Source: MSCI ESG Research

Exclusion

- Recycled products

Factors

Summary

Factor Name	Column Header	Description
Pollution Prevention - Maximum Percentage of Revenue	CT_POLL_PREV_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from products, services, or projects that support pollution prevention, waste minimization, or recycling as a means of alleviating the burden of unsustainable waste generation.
Pollution Prevention and Control Solutions - Source	EM_POLL_PREV_SOURCE	Pollution Prevention and Control Solutions - Source
Pollution Prevention and Control Solutions - Revenue Year	CT_POLL_PREV_REV_YEAR	The fiscal year of the company's pollution prevention involvement.

Subcategories

Factor Name	Column Header	Description
Conventional Pollution Control Solutions - Maximum Percentage of Revenue	CT_POLL_PREV_CONV_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from conventional pollution control like biofilters, carbon adsorbers and catalytic reactors.
Low Toxicity/VOC Solutions - Maximum Percentage of Revenue	CT_POLL_PREV_LOW_TOX_VOC_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from low toxic/VOC construction or building products like paints, adhesives, flooring products and reconstituted fiber boards.
Recycling Solutions - Maximum Percentage of Revenue	CT_POLL_PREV_RECYCLING_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from waste recycling technology or services.

Waste Treatment Solutions - Maximum Percentage of Revenue	CT_POLL_PREV_WASTE_TREATMENT_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from hazardous waste treatment.
Environmental Remediation Solutions - Maximum Percentage of Revenue	CT_POLL_PREV_REMEDIATION_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from environmental remediation technology or services.

Sustainable Agriculture

Sustainable Agriculture category was added to the MSCI Sustainable Impact Metrics framework in 2020 under the theme "Natural Capital". This category currently includes revenues from forest and agricultural products that meet environmental and organic certification requirements to address significant biodiversity loss, pollution, land disturbance, and water overuse.

Inclusions

Production of agricultural and forestry products using certified sustainable or organic practices.

Table 6 - Examples of Sustainable Agriculture Certifications

Sustainable Agriculture Certifications
Bonsucro
Roundtable for Responsible Soy
Better Cotton Initiative
Forest Stewardship Council
Programme for the Endorsement of Forest Certification
Sustainable Forest Initiative
UTZ
Rainforest Alliance
Good Agricultural Practices
Aqua Stewardship Council
United States Department of Agriculture Organic
National Association for Sustainable Agriculture Australia Organic
Australian Forestry Standard
Genesis GAP
Best Aquaculture Practice
Green Licenses
India Organic Certified
Malaysian Good Agricultural Practices

Source: MSCI ESG Research

Exclusions

- Beef and beef products due to the high overall environmental impact of beef production not fully offset through certification themes.²

² UN Food and Agriculture Organization (FAO) "Tackling Climate Change Through Livestock", 2013

- Forestry services such reforestation
- Services to assess the sustainability of a food product
- Products that use certified raw materials (e.g., paper from certified pulp)
- Buildings that use certified wood or building materials

Factors

Factor Name	Column Header	Description
Sustainable Agriculture - Maximum Percentage of Revenue	CT_SUST_AG_MAX _REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from agricultural goods produced using certified sustainable or organic practices
Sustainable Agriculture - Source	EM_SUST_AG_SOU RCE	Sustainable Agriculture - Source

Nutrition

Nutrition is one of the categories under the actionable impact theme ‘Basic Needs’. Under the overarching framework of Sustainable Impact, it has been identified as a category deriving positive impact with the rationale that one of the ways in which companies can play a key role in addressing concerns of basic needs is through the provision of basic nutritious food products.

The aim of this category is to identify the percentage of revenues generated from the manufacture and sale of basic food products. This category includes products classified under the “basic products” category, as defined by Choices International,³ a science-based multi-stakeholder organization focused on nutrition.

According to Choices International, basic products refer to those products that contribute to the daily intake of essential nutrients while non basic are not needed to fulfill daily requirements. To qualify as “basic”, food products must also adhere to requirements laid out by Choices International regarding acceptable amounts of added sugars, salt, etc.

In 2019, Choices International provided a more specific guidance to qualifying nutritional content that includes sugar, sodium, and saturated fat content restrictions. These new criteria are now considered in addition to “basic” food definitions in the estimation of revenue for Nutrition category.

Inclusions

- Products found within basic product groups contribute significantly to the daily intakes of essential nutrients.

Table 7 - Examples of Basic Food Products Typically Included Under the Nutrition Category

Basic food products
Fruits and vegetables
Beans and legumes
Sources of carbohydrates
Meat, fish, poultry, eggs, and meat substitutes
Dairy products
Oils, fats and fat-containing spreads
Nuts
Water
Main meals such as salads, sandwiches, pizza, pasta/ rice/ noodles, etc.

Source: Choices International, MSCI ESG Research

³ Choices International Foundation "International Choices criteria – A global standard for healthier food", 2019

Exclusions

- Products that generally do not contribute substantially to the intake of essential nutrients, significantly exceed dietary restrictions on daily intake limits leading to obesity or diseases, or food supplements and fortified nutrition.
- Confectionery items
- Sauces, pastry, ice cream, and sweet and savory snacks
- Beverages (excluding water) and processed fruit juices
- Bread toppings
- Food supplements, vitamins, and dietary supplements (e.g., protein shakes)
- Food for children under a year old

Factors

Factor Name	Column Header	Description
Nutrition - Maximum Percentage of Revenue	SI_NUTRI_FOOD_M AX_REV	The recent-year percentage of revenue, or estimated revenue percentage, a company has derived from nutritious products in the following sub-industries: Packaged Foods & Meats, Soft Drinks, Food Distributors, Food Retail, and Hypermarkets & Super Centers.

Major Disease Treatments

Major Disease Treatment is one of the categories under the actionable impact theme 'Basic Needs'. Under the overarching framework of Sustainable Impact, it has been identified as a category deriving positive impact with the rationale that one of the ways in which companies can play a key role in addressing concerns of health is through the provision of products used to treat world's major diseases.

The aim of this category is to identify the percentage of revenues generated from the manufacture and sale of products used to treat the world's major diseases as defined by the World Health Organization (WHO).

Inclusions

- Major diseases include those diseases with the highest daily adjusted life year (DALY),⁴ collectively accounting for approximately 50% of global disease mortality, as well as orphan diseases⁵ and neglected tropical diseases,⁶ which are underserved by research and treatment options.

Table 8 - Examples of Major Diseases

Major diseases	Neglected diseases	Orphan diseases
Ischaemic heart disease	Buruli ulcer	Gaucher's disease
Lower respiratory infections	Chagas disease	Pompe disease
Stroke	Dengue and Chikungunya	Hodgkin's lymphoma
Preterm birth	Dracunculiasis (guinea-worm disease)	Multiple myeloma
Complications	Echinococcosis	Fabry's disease
Diarrheal diseases	Foodborne trematodiasis	Thrombocytopenia purpura
Chronic obstructive pulmonary disease	Human African trypanosomiasis (sleeping sickness)	Wilson's disease
Diabetes mellitus	Leishmaniasis	
HIV/AIDS	Leprosy (Hansen's disease)	
Tuberculosis	Lymphatic filariasis	
Depressive disorders		
Cirrhosis of the liver		

⁴ The WHO DALY represents the number of years of life lost due to poor health/disability and earlier death. The sum of these DALYs across the population represents the global burden of disease. More information on DALY can be found in the World Health Organization's The Global Health Observatory.

⁵ Orphan diseases are defined as those diseases that affect a small number of people. The threshold varies per country: For instance, in the US orphan diseases are those that affect less than 1 out of 1,500 people, in Japan 1 out of 2,500 and in Europe 1 out of 2,000.

⁶ World Health Organization's Control of Neglected Tropical Diseases.

Trachea, bronchus, lung cancers	Mycetoma, chromoblastomycosis and other deep mycoses
Malaria	Onchocerciasis (river blindness)
Kidney diseases	Rabies
Neonatal sepsis and infections	Scabies and other ectoparasites
Endocrine, blood, immune disorders	Schistosomiasis
Alzheimer disease and other dementias	Soil-transmitted helminthiases
Asthma	Snakebite envenoming
Migraine	Taeniasis/Cysticercosis
Anxiety disorders	Trachoma
Meningitis	Yaws (Endemic treponematoses)
Liver cancer	
Hepatitis B and C	

Source: WHO, MSCI ESG Research

- Products for the treatment of the major diseases of the world include drugs used for the treatment of these diseases and healthcare equipment used to help diagnose or treat patients with such diseases.

Table 9 - Examples of Healthcare Equipment for the Treatment of Major Diseases

Healthcare equipment
Dialysis machine
Cardiopulmonary equipment such as heart-lung machine, extracorporeal life support
Stent
Blood pressure monitor
ECG machine
Insulin pump

Source: MSCI ESG Research

Exclusions

- Any drugs or equipment not specifically for the treatment or diagnosis of the major diseases mentioned in the above list, and any drug not designated and authorized as an orphan drug.

Factors

Factor Name	Column Header	Description
Major Disease Treatment - Maximum Percentage of Revenue	SI_HEALTHCARE_MAX_REV	The recent-year percentage of revenue, or estimated revenue percentage, a company has derived from drugs for top worldwide diseases typically in the following sub-industries: Healthcare Equipment, Biotechnology, Pharmaceuticals and Life Sciences Tools & Services. Examples of top diseases include HIV/AIDS, TB, Malaria, Stroke, Diarrhea, and orphan diseases.
Orphan Drugs - Revenue	SI_ORPHAN_DRUGS_REV	The recent-year absolute revenue from drugs for orphan/neglected diseases. This datapoint is populated only if the revenue from orphan drugs is reported by the company. Revenue derived from such products (both estimated and reported) is also included in the Major Disease Treatment - Maximum Percentage of Revenue.

Sanitation

Sanitation is one of the categories under the actionable impact theme ‘Basic Needs’. Under the overarching framework of Sustainable Impact, it has been identified as a category deriving positive impact with the rationale that one of the ways in which companies can play a key role in addressing concerns of basic hygiene and sanitary needs is through the provision of sanitation products.

The aim of this category is to identify the percentage of revenues generated from the manufacture and sale of basic sanitation products.

Inclusion

- Personal hygiene products for basic hygienic needs and not simply for beauty/cosmetic applications or luxurious use.

Table 10 - Examples of Basic Sanitary Products Typically Included Under the Sanitation Category

Basic sanitary products
Soaps and shampoos
Oral care products such as toothbrush, toothpaste, and toothpowder
Sanitary napkins, toilet paper and tissues
Adult or infant diapers
Surface cleaners
Laundry and dishwashing detergent
Toilets
Washbasins
Faucets such as taps, shower heads, etc.
Insect repellent for home use
Water purifier

Exclusions

- Products not considered as those necessary for basic hygiene or any luxurious sanitary products.
- Hair oil
- Deodorant
- Interdental toothbrush, electric toothbrush, dental floss
- Color cosmetics and Make up
- Perfume

- Air care products
- Pre-wash fabric care, fabric softener, stain removers
- Detergent for car wash
- Skin care products such as sunscreen, moisturizers, etc.
- Bathtub
- Waste trap
- Insect repellent for garden use

Factors

Factor Name	Column Header	Description
Sanitation - Maximum Percentage of Revenue	SI_SANITARY_PRO D_MAX_REV	The recent-year percentage of revenue, or estimated revenue percentage, a company has derived from sanitation products in the following sub-industries: Household products, Personal products, and Paper products.

Affordable Real Estate

As per the United Nations Development Programme, making cities sustainable means creating career and business opportunities, safe and affordable housing, and building resilient societies and economies.

Affordable Real Estate is one of the categories under the actionable impact theme 'Basic Needs'. Under the overarching framework of Sustainable Impact, it has been identified as a category deriving positive impact with the rationale that one of the ways in which companies can play a key role in addressing concerns of sustainable communities is through the provision of affordably priced real estate.

The aim of this category is to identify the percentage of revenues generated from the lease or sale of affordable commercial and residential real estate properties.

Inclusions

- Affordable residential properties take the form of units devoted to being managed under social rent, homes affordably priced for the low-income segment, and residences for the elderly. It also includes affordable student housing.
- Affordable commercial properties include commercial spaces for Small and Medium Enterprises (SMEs) as these are typically found to be sold/ leased at a lower price point.

Exclusions

- Any residential property not explicitly offered as affordable housing or at a price lower than market value.
- Care homes, hospice like facilities and continued care facilities which provide health care or assistance with activities of daily living are not considered under the scope of affordable elderly housing. Luxurious senior housing facilities

Factors

Factor Name	Column Header	Description
Affordable Real Estate - Maximum Percentage of Revenue	SI_AFFORD_RE_MAX_REV	The recent-year percentage of revenue, or estimated revenue percentage, a company has derived from affordable real estate in the following sub-industries: Homebuilding, Diversified REITS, Industrial REITS, Mortgage REITS, Hotel & resort REITS, Office REITS,

Healthcare REITS, Residential REITS, Retail REITS, Specialized REITS, Diversified Real Estate Activities, Real Estate Operating companies, Real Estate Development, and Real Estate Services.

SME Finance

SME Finance is one of the categories under the actionable impact theme 'Empowerment'. Under the overarching framework of Sustainable Impact, it has been identified as a category deriving positive impact with the rationale that one of the ways in which companies can play a key role in empowering underserved populations is through the provision of loans to small and medium sized enterprises.

The aim of this category is to identify the percentage of revenues generated from providing loans to micro, small and medium-sized enterprises.

Inclusions

- Direct lending to micro, small and medium-sized enterprises (MSMEs).

Exclusions

- All other financial services or products offered to MSMEs
- Micro loans offered to individuals, not businesses.
- Loans to self-employed individuals

Factors

Factor Name	Column Header	Description
SME Finance - Maximum Percentage of Revenue	SI_SOCIAL_FIN__M AX_REV	The recent-year percentage of revenue, or estimated revenue percentage, a company has derived from loans to small and medium enterprises in the following sub-industries: Diversified banks, Regional Banks, Thrifts & Mortgage Finance, Other diversified financial services, Consumer Finance, Life & Health Insurance, and Multiline Insurance.

Education

Education is one of the categories under the actionable impact theme 'Empowerment'. Under the overarching framework of Sustainable Impact, it has been identified as a category deriving positive impact with the rationale that one of the ways in which companies can play a key role in empowering underserved populations is through the provision of education products and services.

The aim of this category is to identify the percentage of revenues generated from education-related products and services used in a school environment.

Inclusions

- Products and services that ensure quality education at all levels.

Table 11 - Examples of Products and Services Typically Included Under the Education Category

Educational products and services
Educational books Schools and institutes Professional courses and trainings that entail a certification Products and services in the domain of kindergarten, primary, secondary, undergraduate, or postgraduate education Provider of tutoring services to students appearing for undergraduate or postgraduate examinations Provider of tutoring services, study material for non-degree exams such as TOEFL, GMAT, GRE, English language skills or other professional exams such as CFA.

Exclusions

- All non-educational content and any product or service that does not contain educational content used in a school environment. For example:
- General literature, illustrated books and newspapers and magazines
- TV programs
- Software platforms for education
- Software product-related training courses
- Employee trainings
- Vocational training courses
- Distributors of educational publications

- Media companies that license educational content without ownership of the related intellectual property rights
- Any educational program being offered free of cost

Factors

Factor Name	Column Header	Description
Education - Maximum Percentage of Revenue	SI_EDU_SERV_MAX _REV	The recent-year percentage of revenue, or estimated revenue percentage, a company has derived from education services in the following sub-industries: Diversified Support Services, Human Resource & Employment Services, Education Services, Specialized Consumer Services, Broadcasting, Cable & Satellite, Publishing, Internet Software & Services, Application Software, Systems Software, Home Entertainment Software, Technology Hardware, Storage & Peripherals, Alternative Carriers, Integrated Telecommunication Services, Wireless Telecommunication Services, Movies & Entertainment, Distributors, Advertising, Industrial Conglomerates and Technology Distributors.

Connectivity

Connectivity category was added to the MSCI Sustainable Impact Metrics framework in 2020 under the theme "Empowerment". This category currently includes companies that support telecommunication networks development to address the need for bridging digital divide and empowerment of underserved communities through better connectivity to information and communication. This new category currently includes access to internet communication but may be expanded in the future to address other types of infrastructure that enable societal connectivity.

The aim of this category is to identify the percentage of revenues generated from identified products and services that provide or support internet access for people in the Least Developed Countries (LDCs) as defined by the United Nations.

Inclusions

- Products and services that help reduce digital divide in LDCs through development of telecommunications infrastructure.

Table 12 - Examples of Products and Services Typically Included Under the Connectivity Category

Connectivity products and services
Internet service providers (ISPs): cable internet, DSL (digital subscriber line), fiber internet, BPL (broadband over power lines), satellite internet access, mobile broadband (3G+), WiMAX, and wireless internet service providers Telecommunication equipment provided to internet service providers including transceiver stations, transmission lines, multiplexers, digital switches, communication satellites, etc. Repair services for qualifying infrastructure/ service Ethernet spine switches

Exclusions

- Products and services that are not explicitly intended to provide or support internet access in the LDCs or individual use products that require network infrastructure. Examples included:
- Consumer equipment such as modems, mobile devices, home wireless routers
- Raw material used in the construction of telecommunication equipment such as copper, glass, or plastic
- 2G wireless internet or 56.6K dial up access
- Cognitive WiFi

Factors

Factor Name	Column Header	Description
Connectivity - Maximum Percentage of Revenue	SI_CONNECTIVITY_MAX_REV	Recent-year percentage of revenue, or estimated revenue from products, services, or infrastructure that support internet connectivity in the Least Developed Countries as defined by the United Nations

Sustainable Impact Metrics

Factors

Factor Name	Column Header	Description
Environmental Impact Solutions - Revenue Year	CT_REV_YEAR	The fiscal year of the company's Environmental Impact involvement.
Environmental Impact Solutions - Maximum Percentage of Revenue	CT_TOTAL_MAX_RE EV	This field represents the total of all revenues derived from any of the six clean tech themes including alternative energy, energy efficiency, green building, pollution prevention, sustainable water, and sustainable agriculture.
Environmental Impact Solutions - Estimated Revenue Range	CT_TOTAL_EST_RE V	This field represents the total estimated revenues range from any of the six environmental themes including alternative energy, energy efficiency, green building, pollution prevention, sustainable water, and sustainable agriculture. Options are 1 – 19.99%, 20 - 49.99%, and 50 – 100%.
Environmental Impact Solutions - Revenue Key	CT_TOTAL_REV_KEY Y	This field indicates whether the revenue figure was reported by the company or estimated.
Social Impact Solutions - Revenue Year	SI_TOTAL_REV_YEAR	The fiscal year of the company's Social Impact involvement.
Social Impact Solutions - Maximum Percentage of Revenue	SI_TOTAL_MAX_RE V	This field represents the total of all revenues derived from any of the seven social impact themes including nutrition, sanitation, major diseases treatment, SME finance, education, affordable real estate, and connectivity.
Social Impact Solutions - Estimated Revenue Range	SI_TOTAL_EST_RE V	This field represents the total estimated revenues range from any of the seven social impact themes including nutrition, sanitation, major diseases treatment, SME finance, education, affordable real estate, and connectivity.

Social Impact Solutions - Revenue Key	SI_TOTAL_REV_KEY	This field indicates whether the revenue figure was reported by the company or estimated.
Social Impact Solutions - Source	SI_SOURCE	Social Impact Solutions - Source
Climate Change - Maximum Percentage of Revenue	CT_CC_TOTAL_MAX_REV	This field represents the total of all revenues derived from any of the climate change environment impact themes including alternative energy, energy efficiency, and green building.
Natural Capital - Maximum Percentage of Revenue	CT_NAT_CAP_TOTAL_MAX_REV	This field represents the total of all revenues derived from any of the natural capital environment impact themes including sustainable water, pollution prevention, and sustainable agriculture.
Basic Needs - Maximum Percentage of Revenue	SI_BASIC_N_TOTAL_MAX_REV	This field represents the total of all revenues derived from any of the basic needs social impact themes including nutrition, sanitation, major diseases treatment, and affordable real estate.
Empowerment - Maximum Percentage of Revenue	SI_EMPOWER_TOTAL_MAX_REV	This field represents the total of all revenues derived from any of the empowerment social impact themes including SME finance, education, and connectivity.
Sustainable Impact Solutions - Maximum Percentage of Revenue	SI_SUST_IMPACT_MAX_REV	This field represents the total of all revenues derived from any of the thirteen social and environmental impact themes including nutrition, sanitation, major diseases treatment, SME finance, education affordable real estate, connectivity, alternative energy, energy efficiency, green building, pollution prevention, sustainable water, and sustainable agriculture.
Sustainable Impact Solutions - Maximum Percentage of Revenue Key	SI_SUST_IMPACT_MAX_REV_KEY	This field indicates whether the Maximum Percentage of Revenue indicator is originated from both environmental and social impact solutions estimates; environmental impact solutions estimates only or social impact solutions estimates only.

Appendix

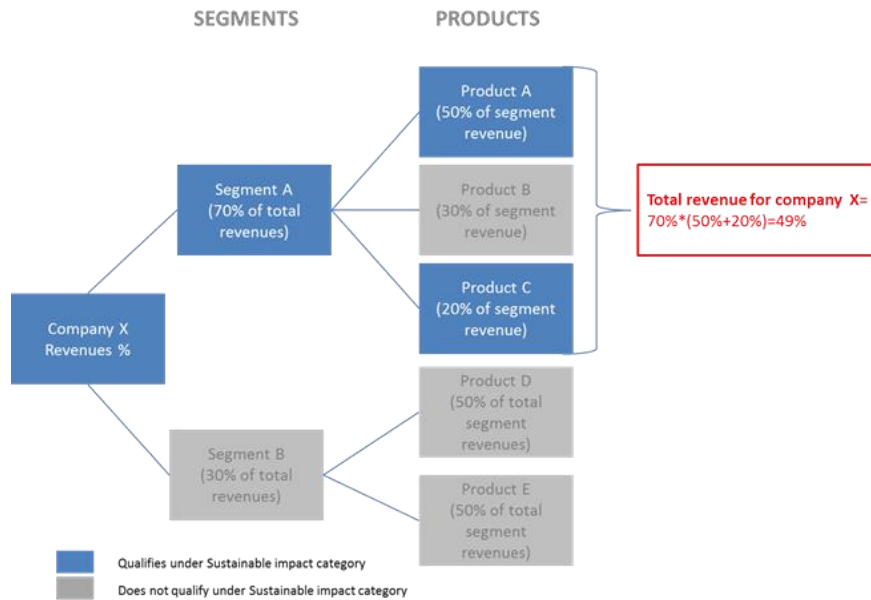
Revenue Estimation Model

Assessing revenue exposure to Sustainable Impact solutions requires strong technical expertise. Very few companies report revenues at the product level. Less than 5% of the revenue data in the Sustainable Impact Metrics is used as reported by companies. The rest of the data requires some level of estimation based on varying levels of disclosed data.

Revenue is estimated based on the publicly disclosed information, including companies annual and quarterly reports, investor presentations, industry, and NGO reports (e.g., certified material purchasing status reports), government databases (e.g., medical preparation registrations), third party datasets (e.g., nutrition databases based on product labels). Analysts use a systematic process to estimate the proportion of revenues that qualify under the respective Sustainable Impact categories. Each Sustainable Impact category (e.g., SME Finance, Major Disease Treatments, Nutrition) utilizes specific guidelines to estimate product revenues that meet sustainability criteria. For example, we use the number of products to estimate revenues associated with thematic activities. In general, however, product revenue estimates are derived from a weighted average of a company's segment and specific product revenues that qualify under the Sustainable Impact categories.

Consider an example of a Company X that reports revenue by segment (Figure 12). Segment A of the company's revenue base meets Sustainable Impact criteria and represents 70% of the company's total revenue. This segment is comprised of three product groups two of which meet Sustainable Impact criteria: one accounting for 50% and the second for 20% of Segment A revenue. The total qualifying Sustainable Impact revenue is estimated to be: $70\% \times (50\% + 20\%) = 49\%$.

Figure 12 – Estimating Sustainable Impact Revenue



This calculation approach would be used in a case of a company that derives 70% from pharmaceuticals and 30% from other chemical preparations. Within its pharmaceuticals segment, 3 out of 6 drugs meet qualifying criteria of the Major Diseases Treatment category (addressing the top 20 diseases and/or orphan drugs). The total revenue percent under the Major Diseases Treatment category would be estimated as $70% * (3/6) = 35%$.

Please note that the above is a simplistic demonstration of the revenue estimation process. In addition to segment and product distribution, our analysts also take cues from company disclosures like market performance, specific product discussions, sales orders, investor presentations and prospects, and other items in company documents.

Revenue Estimation for Corporate Actions

If MSCI ESG Research determines the corporate action would have an impact on a company's involvement and revenue, forward-looking estimates for the year of the transaction will be created. In simple terms, the acquiring entity would incorporate the attributes of the acquired entity including assets and revenues. Analysts will use all available disclosed information to calculate new revenue estimates for business activities.

- If the acquiring entity doesn't disclose pro forma revenue post-transaction, then estimates are calculated by way of simple combination of the two entities' revenues. The following year, when the surviving entity publishes its new annual filing, revenue estimates are reviewed and updated as necessary.
- For example, COMPANY A acquired COMPANY B, and COMPANY A had the following attributes,
- Total revenue for FY 2019 = USD 2,500
- Alternative Energy estimated revenue for FY 2018 = 5%,

and COMPANY B had the following attributes,

- Total revenue for FY 2019 = USD 5,000
- Energy Efficiency estimated revenue for FY 2019 = 9%

Assuming COMPANY A didn't disclose pro forma revenue after the transaction was completed, then forward-looking estimates would appear as:

- Total revenue for FY 2020 = USD 7,500
- Alternative Energy estimated revenue for FY 2020 = 1.67%
- Energy Efficiency estimated revenue for FY 2020 = 6%
- These values were computed by dividing the values for COMPANY A's 5% and COMPANY B's 9% by the estimated total revenue.

Sample Revenue Estimations

The following are sample revenue computations for a given fiscal year:

1. China Everbright International Limited
2. Equinix Inc.
3. Meidensha Corporation
4. Banco de Chile
5. Novartis AG

Environmental Impact

China Everbright International Limited

Narrative

In FY 2018, China Everbright International Limited derived an estimated 59.03% of revenues from supplying alternative energy or providing products or services that support alternative energy, 17.61% of its revenues from products or services that reduce or prevent pollution, and 15.77% of its revenues from products or services that resolve water quality and supply issues. The company produced energy from solar, biomass, and waste-to-energy facilities. The company also provided waste water treatment, and water recycling services.

Revenue Estimation

Total Company Revenue: HKD 27,228 million (Source: 2018 Annual Report, p. 131)

Segment	Segment Revenue Percent	Environmental Impact percent credited	Notes
Environmental Energy projects	54.75%	Alternative Energy: 42.44% Pollution Prevention & Control: 8.49%	95/114 projects are included for Alternative Energy while 19/114 projects are included for Pollution Prevention & Control
Environmental Water projects	17.33%	Sustainable Water: 15.75%	A total of 111 projects, but 94 projects are considered under industrial waste water treatment and 7 projects are under Recycled Water
Greentech projects	25.71%	Alternative Energy: 16.59%	Out of the 93 projects, 51 for biomass, 7 for

	Pollution Prevention & Control: 9.12%	solar, and 2 for wind power projects were all included. 33 out of the 93 projects were all included for waste treatment.
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In summary, revenue at the theme level for FY 18 was estimated as:

1. Pollution Prevention & Control = 8.49% + 9.12% = 17.61%
2. Alternative Energy = 42.44% + 16.59% = 59.03%
3. Sustainable Water = 15.77%
4. Total Environmental Impact Solutions revenue estimate = 92.41%

Source: 2018 Annual Report

Equinix Inc.

Narrative

In FY 2018, EQUINIX, INC. derived an estimated 21.72% of its revenues from products or services that help reduce energy consumption. The company owned and operated data centers and provided IT Optimization Services and Cloud Infrastructure.

Revenue estimation

Total Revenue: USD 5,071.65 million (Source: 2018 10-K, p. 39)

Segment	Segment Revenue Percent	Environmental Impact percent credited	Notes
Colocation Segment	72.37%	Energy Efficiency: 14.47%	Out of the 5 offerings listed in the 2018 Annual Report, only the Hyperscale Data Centers was included resulting in a 14.47% estimate.
Interconnection Segment:	15.81%	Energy Efficiency: 1.58%	Out of the 5 solutions, only Equinix Cloud Exchange was included. A further 50% estimate was applied to only include IaaS and PaaS applications. This resulted in a 1.58% estimate.

Managed Infrastructure	5.51%	Energy Efficiency: 5.51%	100% credited for IaaS
Other	0.49%	Energy Efficiency: 0.16%	Out of the three services, only Cloud Consulting Services was included.

In summary, revenue at the theme level for FY 18 was estimated as:

1. Energy Efficiency = 14.47% + 1.58% + 5.51% + 0.16% = 21.72%
2. Total Environmental Impact Solutions revenue estimate = 21.72%

Sources: 2018 10-K and company website.

Meidensha Corporation

Narrative

In FY 2017 (the latest reported by the company), MEIDENSHA CORPORATION derived an estimated 23.27 % of its revenues from products or services that help reduce energy consumption, 18.27 % of revenues from supplying alternative energy or providing products or services that support alternative energy, and 10.14 % of its revenues from products or services that resolve water quality and supply issues. The company manufactured electric power systems for the renewable energy market, equipment for e-vehicles, membrane filters for wastewater treatment, and power control and monitoring systems for railways and smart grids. These products and offerings can be found under the Social Infrastructure Systems and Industrial Systems segments.

Revenue Estimation

Total Company Revenue: JPY 241.83 billion (p.6 of 2017 AR)

Segment	Segment Revenue Percent	Environmental Impact percent credited	Notes
Social Infrastructure Systems	60.81%	<u>Alternative Energy: 18.27%</u> <u>Sustainable Water: 10.14%</u> Energy Efficiency: 22.27%	The revenues from Social Infrastructure Systems segment are firstly equally attributed (20.87% for each theme) under the 3 relevant themes. A conservative estimate of 2% was awarded to smart grid

			<p>since all alternative energy offering includes a smart grid solution. For Sustainable Water, it consists of 2 applications, namely, drinking water and waste water. Therefore, $20.27\% / 2 = 10.14\%$ estimated for waste water. The full 20.27% was given to the Clean Transport Infrastructure for Energy Efficiency along with the 2% from the smart grid services.</p>
Industrial Systems	23.12%	Energy Efficiency: 1.45%	<p>The segment has 4 main products but only the Motors and inverters for elevators, textile machinery, industrial vehicles, and electric vehicles was included. A further $\frac{1}{4}$ estimate was applied to only included the electric vehicles application.</p>

In summary, revenue at the theme level for 2017 was estimated as:

1. Energy Efficiency = $22.27\% + 1.45\% = 23.72\%$
2. Alternative Energy = 18.27%
3. Sustainable Water = 10.14%
4. Total Environmental Impact Solutions revenue estimate = 52.13%

Sources: 2017 Annual Report and company website.

Social Impact

Banco de Chile

Narrative

In FY 2018, Banco de Chile derived an estimated 6.2 % of revenues from SME lending. This comprises net interest income derived from lending activities.

Revenue Estimation

Estimate Description	US Dollar (million)
SME Lending (A)	5,366.73
Total loans and receivables to customers (B)	42,349.99
% Loans to SME (A/B = C)	12.67%
Net Interest Income (D)	1,900.67
Total Income* (E)	3,885.24
SME Finance – Maximum Percentage of Revenue ((D X C)/E)	6.20%

*Total interest income + other operating income + Income from fees and commissions

Source: 2018 Annual Report (pp. 72, 207 and 214 of 236).

Novartis AG

Narrative

Novartis is a Swiss based pharmaceutical company involved in research, development, manufacture, and marketing of a range of pharmaceutical and consumer healthcare products worldwide. The company's broad portfolio includes innovative pharmaceuticals and oncology medicines, generic and biosimilar medicines, and eye care devices.

Revenue estimation

Revenue from healthcare products:

In FY 2018, Novartis AG derived an estimated 46.82 % of its revenues from products for the treatment or diagnosis of major diseases of the world, i.e. those diseases that are having the largest impact on the world population.

In FY 2018, the company generated revenue of USD 51,900 million from three operational business segments: Innovative Medicines (67.23%), Sandoz (19.00%), and Alcon (13.77%).

Under Innovative Medicines segment (67.23% of total revenues), Novartis has several products that qualify under the Social Impact criteria. Similarly, Sandoz segment (19.00% of total revenues) constitutes of three business segments which have some products that qualify under the Social Impact criteria.

Segment	Divisions	Percent of divisional revenue attributed to Healthcare theme*
Innovative Medicines (A)	Oncology	21.34%
	Immunology, Hepatology and Dermatology	1.07%
	Respiratory	3.36%
	Cardio-Metabolic	1.98%
	Established Medicines	6.38%
	Neuroscience	6.44%
	Ophthalmology	X
Sandoz (B)	Retail Generics	3.80%
	Biopharmaceuticals	2.46%
	Anti-infectives	X
Alcon (C)	Surgicals	X
	Vision care	X
Total Social Impact revenue from health care (A+B+C)		46.82%

*as percent of Total Revenue; X implies divisions that did not qualify under our Sustainable Impact criteria

Orphan diseases revenue

Additionally, we also give credit to companies that are doing research on orphan and rare diseases, as those diseases are often less appealing to drug companies due to the low volume of patients. Novartis derived approximately USD 14,972 million in FY 2018 from orphan drugs for treatment of diseases such as thalassemia, sarcoma, leukemia, acromegaly, thyroid cancer, and neuroendocrine tumors.

Source: 2018 Form 20-F (pp. 65, 66, 86, 87, 255 and 259 of 337).

Contact us

esgclientservice@msci.com

AMERICAS

Americas	1 888 588 4567 *
Atlanta	+ 1 404 551 3212
Boston	+ 1 617 532 0920
Chicago	+ 1 312 675 0545
Monterrey	+ 52 81 1253 4020
New York	+ 1 212 804 3901
San Francisco	+ 1 415 836 8800
São Paulo	+ 55 11 3706 1360
Toronto	+ 1 416 628 1007

EUROPE, MIDDLE EAST & AFRICA

Cape Town	+ 27 21 673 0100
Frankfurt	+ 49 69 133 859 00
Geneva	+ 41 22 817 9777
London	+ 44 20 7618 2222
Milan	+ 39 02 5849 0415
Paris	0800 91 59 17 *

ASIA PACIFIC

China North	10800 852 1032 *
China South	10800 152 1032 *
Hong Kong	+ 852 2844 9333
Mumbai	+ 91 22 6784 9160
Seoul	00798 8521 3392 *
Singapore	800 852 3749 *
Sydney	+ 61 2 9033 9333
Taipei	008 0112 7513 *
Thailand	0018 0015 6207 7181 *
Tokyo	+ 81 3 5290 1555

* = toll free

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