

MSCI ESG Ratings Methodology: Opportunities in Renewable Energy Key Issue

MSCI ESG Research LLC

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Introduction

This document provides essential information on the components of the Opportunities in Renewable Energy Key Issue to enable users of ESG Ratings to understand how our outputs are determined. Opportunities in Renewable Energy is a Key Issue in the Environmental Pillar of the MSCI ESG Ratings model. Companies are evaluated on their positioning to meet market demand for renewable power through capacity additions and network expansion.

For additional details on the MSCI ESG Ratings Model, refer to Section 2, Data, ratings and scores, of “ESG Ratings Methodology.”

Exhibit 1: MSCI ESG Key Issue hierarchy

3 Pillars	10 Themes	33 ESG Key Issues
Environmental	Climate Change	Carbon Emissions
		Climate Change Vulnerability
		Financing Environmental Impact
		Product Carbon Footprint
	Natural Capital	Biodiversity & Land Use
		Raw Material Sourcing
		Water Stress
	Pollution & Waste	Electronic Waste
		Packaging Material & Waste
		Toxic Emissions & Waste
		Opportunities in Clean Tech
Social	Environmental Opportunities	Opportunities in Green Building
		Opportunities in Renewable Energy
	Human Capital	Health & Safety
		Human Capital Development
		Labor Management
		Supply Chain Labor Standards
	Product Liability	Chemical Safety
		Consumer Financial Protection
		Privacy & Data Security
		Product Safety & Quality
	Stakeholder Opposition	Responsible Investment
		Community Relations
		Controversial Sourcing
	Social Opportunities	Access to Finance
		Access to Health Care
		Opportunities in Nutrition & Health
Governance	Corporate Governance	Board

3 Pillars	10 Themes	33 ESG Key Issues
		Pay
		Ownership & Control
		Accounting
		Business Ethics
	Corporate Behavior	Tax Transparency

Opportunities associated with this Key Issue

- Increased revenues from utilizing public subsidies.
- Increased revenue due to changing consumer demand.
- Increased access to markets due to renewable power generation mandates (state, national or regional objectives).
- Increased market share in specific market segments due to early-mover status.

Opportunities in Renewable Energy Key Issue Score

The Opportunities in Renewable Energy Key Issue Score evaluates the company's level of exposure to, and management of, opportunities on this Key Issue. The Key Issue Score on this Key Issue is based on the Exposure Score and the Management Score using the formula below. The Exposure Score and the Management Score are combined such that the Exposure Score determines the weight placed on the Management Score, ranging from 50% (when the Exposure Score is equal to zero) to 100% (when the Exposure Score is equal to 10).

$$KI_i = \left(\left(\frac{EXP_i}{20} + .5 \right) \times MGMT_i \right) + \left(\left(.5 - \frac{EXP_i}{20} \right) \times 5 \right)$$

Where:

- KI_i is the Key Issue Score for company i .
- EXP_i is the Exposure Score for company i .
- $MGMT_i$ is the Management Score for company i .

Opportunities in Renewable Energy Management Score

The Opportunities in Renewable Energy Management Score evaluates the company's ability to manage its exposure to opportunities on this Key Issue. It is based on an average of the scores associated with each of the Management Score categories listed below. These scores are derived from data points that are scored on a 0-10 scale, with 10 corresponding to best practice and 0 corresponding to lack of management. Refer to Section 3.3, Analyzing risk management, of "ESG Ratings Methodology" for additional details. Sources are company disclosures except where otherwise indicated. The following formula is used to calculate the Opportunities in Renewable Energy Management Score:

$$MGMT_{ORE,i} = \frac{STRAT_{ORE,i} + PROI_{ORE,i} + PERF_{ORE,i}}{3}$$

Where:

- $MGMT_{ORE,i}$ is the Opportunities in Renewable Energy Management Score for company i .
- $STRAT_{ORE,i}$ is the Strategy Score for company i .
- $PROI_{ORE,i}$ is the Programs & Initiatives Score for company i .
- $PERF_{ORE,i}$ is the Performance Score for company i .

The following data points, without constituting an exhaustive list, are representative of the inputs to the Management Score and are used in the Management Score calculation:

Management Score category: Strategy Score

- **Targets to increase renewable capacity.**
Definition: Indicates whether the company has disclosed quantitative targets to increase renewable energy capacity. Includes targets referring to owned capacity only, i.e., excluding purchasing agreements. Applies to companies with an electricity generation business only.
- **Internal structures to develop renewable capacity.**

Definition: The company's established internal structures related to developing renewable capacity. Best practice is to have a dedicated renewable energy subsidiary or be wholly involved in renewables. Applies to companies with an electricity generation business only.

- **Investments to increase connection of renewable power to electric grid.**

Definition: Indicates whether the company has made investments related to the increased connection of renewable power to the electric grid. Applies to companies with an electricity transmission or distribution business only.

- **Ratio of planned additional renewable electricity generation to current total capacity.**

Definition: The ratio of the company's planned additional renewable electricity generation capacity to the company's current total electricity generation capacity.

Management Score category: Programs & Initiatives Score

- **Commercializes renewable power equipment.**

Definition: Indicates whether the company implements programs that involve the installation of equipment used in renewable energy generation.

- **Offers customers a green power option.**

Definition: Indicates whether the company offers its customers the option to purchase power from renewable generation sources. Applies to companies with an electricity supply business only.

- **Extent of integrating renewable energy technology with other industries.**

Definition: Assesses the extent to which the company integrates renewable energy technology with other industries (e.g., with car manufacturers, energy storage). Expressed as a 0-10 score, where 10 indicates strong evidence of partnerships with other businesses and that research and development is heavily focused on renewable power integration into other industries.

Management Score category: Performance Score

Assesses the company's performance on opportunities in renewable energy metrics (including renewable capacity and percentage change in the proportion of renewable capacity to total generation capacity) relative to its peers. Expressed as a 0-10 score, where 10 indicates the highest level of performance.

Representative performance metrics:

- Renewable capacity (megawatts and percentage)
 - Wind.
 - Solar.
 - Geothermal.
 - Biomass.
 - Waste energy.
 - Wave tidal.
 - Hydroelectric.
 - Other renewable.
 - Total renewable capacity (including hydroelectric).
- Percentage change in the proportion of renewable capacity to total generation capacity since 2005.

Opportunities in Renewable Energy Exposure Score

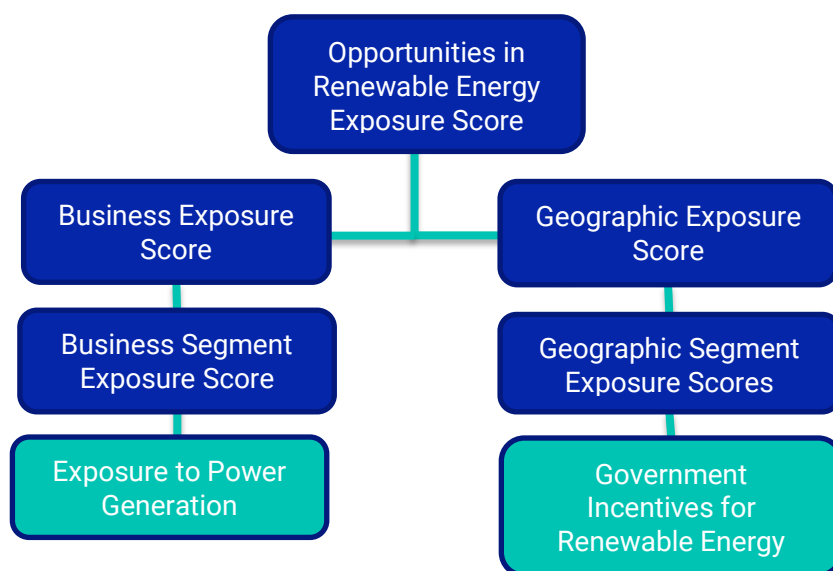
The Opportunities in Renewable Energy Exposure Score evaluates the company's exposure to opportunities on this Key Issue. It is based on the Business and Geographic Exposure Scores. The Geographic Exposure Score functions as a multiplier on the Business Exposure Score, with an impact ranging from -50% to +50%. The Business and Geographic Exposure Scores are scored on a 0-10 scale, with 10 corresponding to the highest opportunity and 0 corresponding to the lowest opportunity. Refer to Section 3.2, Analyzing risk exposure, of "ESG Ratings Methodology" for additional details. The following formula is used in the Exposure Score calculation:

$$EXP_{ORE,i} = BUS_{ORE,i}(1 + 0.1(GEO_{ORE,i} - 5))$$

Where:

- $EXP_{ORE,i}$ is the Opportunities in Renewable Energy Exposure Score of company i .
- $BUS_{ORE,i}$ is the Business Exposure Score of company i .
- $GEO_{ORE,i}$ is the Geographic Exposure Score of company i .

Exhibit 2: Exposure Score components



Business Exposure Score

The Business Exposure Score is a weighted average of the Business Segment Exposure Scores of a company's business segments. Scores are weighted by the proportion of a company's total revenue in each business segment using the following formula to calculate the Business Exposure Score:

$$BUS_{ORE,i} = \sum_{j=1}^{n_i} w_{Revenue,i,j} BSE_{ORE,j}$$

Where:

- $BSE_{ORE,j}$ is the Business Segment Exposure Score for the business segment j .
- $w_{Revenue,i,j}$ is the weight of business segment j for company i based on the contribution to total company revenue.
- n_i is the number of business segments of company i .

Business Segment Exposure Scores

The Business Segment Exposure Score of a business segment is based on a mapping of the business segment as disclosed by the company to a corresponding business activity. MSCI ESG Research uses the Standard Industrial Classification (SIC) system along with industry-specific adjustments to define business activities. The score associated with a business activity is used to calculate a Business Segment Exposure Score. The Business Segment Exposure Score is determined by a qualitative assessment of whether a business activity has a core involvement in power generation. A higher involvement will result in a higher exposure score for the business activity.

Geographic Exposure Score

The Geographic Exposure Score is a weighted average of the Geographic Segment Exposure Scores of the countries and regions in which a company operates. Scores are weighted by the proportion of a company's total revenue in each geographic segment through the following equation:

$$GEO_{ORE,i} = \sum_{r=1}^{n_i} w_{Revenue,i,r} GSE_{ORE,r}$$

Where:

- $GSE_{ORE,r}$ is the Geographic Segment Exposure Score in region r for company i .
- $w_{Revenue,i,r}$ is the weight of total revenue in region r for company i .
- n_i is the number of geographic segments for company i .

For geographic segments reported as regions (example: Asia Pacific), a nominal GDP-weighted country aggregation is used to calculate region-level scores, using the following equation:

$$GSE_{ORE,r} = \sum_{c=1}^{n_r} w_{GDP,r,c} GSE_{ORE,c}$$

Where:

- $GSE_{ORE,r}$ is the Geographic Segment Exposure Score of region r .
- $GSE_{ORE,c}$ is the Geographic Segment Exposure Score of country c .
- $w_{GDP,r,c}$ is the specific weight of country c within region r .

Geographic Segment Exposure Scores

The Geographic Segment Exposure Score is determined by the incentives provided by a country to expand renewable power generation capacity.

$$GSE_{ORE,c} = TI_c + REO_c$$

Where:

- TI_c is the Total Incentives Score for country c .
- REO_c is the Renewable Energy Outlook for country c .

The following types of regulatory, fiscal and public financing incentives are considered for the Total Incentives Score:

1. Feed-in tariffs
2. Tradable energy certificates
3. Renewable portfolio standards
4. Capital subsidies, grants or rebates
5. Investment tax credits
6. Sales tax credits
7. Tax exemptions/reductions
8. Public investment loans

9. Public competitive bidding

The Total Incentives Score measures the number of incentives provided by a country. Provision of more incentives results in a higher opportunity score for a country.

The Renewable Energy Outlook for a country is based on a qualitative assessment by MSCI ESG Research on the planned renewable capacity additions and investments in renewable power generation in the country.

Data Sources

The following sources are used to determine the Climate Change Vulnerability Exposure Score:

Refinitiv, MSCI ESG Research, company disclosures, Renewable Energy Policy Network for the 21st Century.

Contact us

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AMERICAS

United States	+ 1 888 588 4567 *
Canada	+ 1 416 687 6270
Brazil	+ 55 11 4040 7830
Mexico	+ 52 81 1253 4020

EUROPE, MIDDLE EAST & AFRICA

South Africa	+ 27 21 673 0103
Germany	+ 49 69 133 859 00
Switzerland	+ 41 22 817 9777
United Kingdom	+ 44 20 7618 2222
Italy	+ 39 02 5849 0415
France	+ 33 17 6769 810

ASIA PACIFIC

China	+ 86 21 61326611
Hong Kong	+ 852 2844 9333
India	+ 91 22 6784 9160
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Singapore	+ 65 67011177
Australia	+ 612 9033 9333
Taiwan	008 0112 7513 *
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* toll-free

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