# GRESB Real Estate Scoring Methodology

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GRESB®

Enhancing and protecting shareholder value
by evaluating and improving the sustainability
performance of real assets

# About GRESB

GRESB is an industry-driven organization committed to assessing the environmental, social, and governance (ESG) performance of real assets globally, including real estate portfolios (public, private and direct), real estate debt portfolios, and infrastructure. More than 250 members, including 58 pension funds and their fiduciaries, use GRESB data in their investment management and engagement process, with a clear goal to optimize the risk/return profile of their investments. For more information, visit www.gresb.com.

## GRESB Assessments

With assessments for both standing investments and new developments, and for both equity and debt investments in real estate, GRESB has created tools that can be used globally by property investors, lenders and managers to improve the ESG performance of portfolios. Leading companies have shown that this can provide bottom-line benefit through lowering operating costs, attracting and retaining desirable tenants, and in some cases commanding premium rents. GRESB data are collected on an annual basis, using a consistent format for both private and publicly traded real estate and infrastructure investments across the globe. The data are subjected to a multi-layer validation process and the result is high quality, investment-grade data that investors can use to benchmark their current and future investments against both absolute standards and industry peers.

### Real Estate

The GRESB Real Estate Assessment provides the basis for the systematic reporting, objective scoring, and peer benchmarking of ESG management and performance for property companies and funds around the world. The Assessment covers ESG management and policy, as well as implementation and operational performance indicators. The benchmark results provide participants with the opportunity to identify the areas in which they can improve sustainability performance, both in absolute terms and relative to their peers. Moreover, it provides real estate investors and banks with actionable information and the tools they need to accurately monitor and manage the sustainability risks of their portfolios, and to prepare for increasingly rigorous ESG obligations.

### Real Estate Debt

The GRESB Real Estate Debt Assessment is a sustainability engagement, performance assessment and benchmarking tool for types of real estate lenders. This ESG assessment contributes to more valuable investments backed by more efficient, more desirable assets. The Debt Assessment results provide an opportunity to identify areas in which ESG performance improvement can be made, both in absolute terms and relative to peers.

### Infrastructure

GRESB Infrastructure applies GRESB's well-established expertise in assessment, scoring, and benchmarking to an increasingly important, emerging asset class. GRESB Infrastructure gives institutional investors the tools needed to understand and engage funds and assets covering a wide range of business activities, such as energy generation, transportation, telecommunications, water resources management, and social infrastructure (e.g., aged care, convention, and similar).

The first GRESB Infrastructure assessment took place in 2016. Assessment criteria are based on input from the GRESB Infrastructure Advisory Board, comprised of representatives of global infrastructure investors and infrastructure operators and managers.

2009

2015

2016

# 2016 Data Validation Process

All GRESB Assessments include references to and requirements for rigorous third-party reviews an important step towards investment-grade data. In addition to this, GRESB's internal, three-layer data quality control process is designed to encourage and ensure submission of high quality information.

Validation of data starts before a response is even submitted. The GRESB Portal includes a variety of automated data checks. These tools provide users with warnings about potential problems and, in some cases, prevent submission of errors.

Following the submission deadline and prior to analyzing the data, GRESB validates participants' input data. This process continues from the date of the first Assessment submission until July 31.
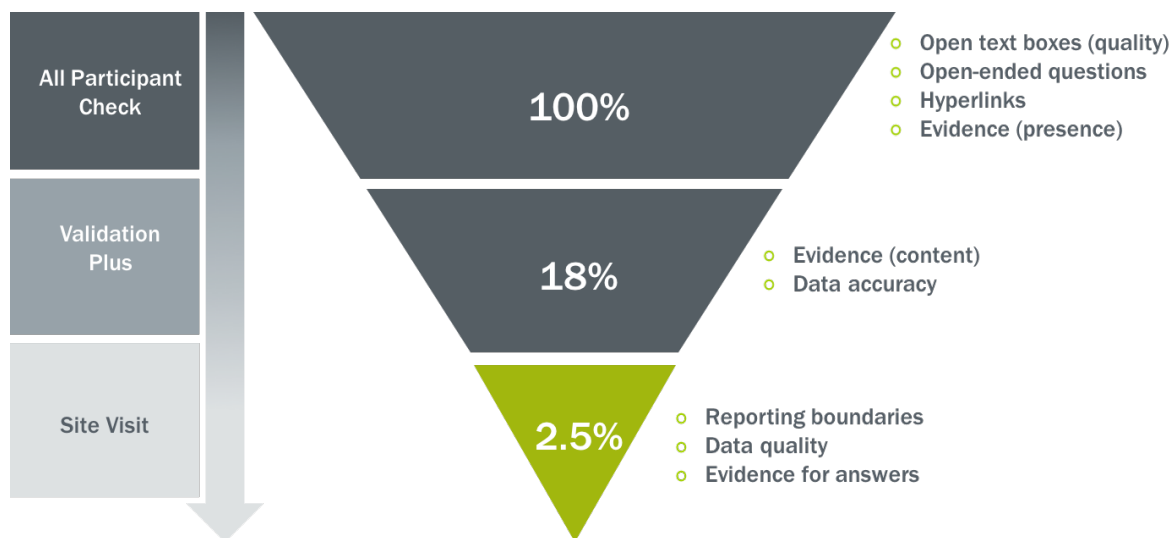


Figure 1 - 2016 GRESB Real Estate Validation

All data submitted in the benchmark goes through GRESB's data validation process. 2016 was the third year in which GRESB operated its three-layer data validation process, developed in consultation with PwC, and introduced over a three-year period (2014-2016).

In 2016, the topics covered by the validation process and the number of participants selected for Validation Plus and Site Visits, increased significantly. In addition to increasing the number of assessments included in the data quality process, GRESB expanded the data validation team with resources from its parent company, GBCI, and further developed the IT infrastructure used for validation, and refined and expanded on the participant selection process for Validation Plus and Site Visits.

## All Participant Checks

- Checks on all benchmark submissions, for selected data points;
- In 2016, the All Participant Check was applied to 232 data point checks across all Assessment Aspects;
- Validation per question with a secondary review system;
- Focus on open text boxes and open fields, including service providers, standards, and green building certificates and energy ratings;
- Supplemental checks to confirm the existence of supporting evidence for questions requiring documentary evidence (hyperlinks, uploaded documents, or details of the name and date of the document);
- In 2016, GRESB validated more than 27,000 open text boxes and open fields;
- In 2016, GRESB validated more than 3,300 outlier messages, triggered by automated outlier checks in the online Assessment Portal.

## Validation Plus

- An additional desktop review on a selection of all Assessment submissions;

- Automatic, random selection via the GRESB Portal, using a pre-defined algorithm;

- In 2016, Validation Plus was applied to 138 Real Estate assessments (18% of total);

- Validation per entity with a secondary review system;

- Document review of supporting evidence for selected indicators. Where no document was provided, the GRESB team contacted the participant to request the document;

- In 2016, GRESB validated more than 16,000 uploaded documents.

## Site Visits

- In-depth assessment of data, performed either in-person or over the phone by GRESB on a selection of all Assessment submissions;

- Random selection of participants using a system that analyzes criteria based on 2015 Assessment submission data. The system automatically picks participants based on a profile that takes into account 2015 Assessment validation decisions, outliers, and performance;

- In 2016, Site Visits included 95 data point checks per selected participant;

- Focus on the mapping of the portfolio (Reporting and Entity Characteristics), and supporting evidence.

## Quantitative Data Quality Control

Based on statistical modelling, GRESB identifies outliers in all reported quantitative data. This analysis is performed to ensure that all participating entities included in the benchmarking and scoring process are compared based on a fair, quality-controlled dataset.

### Identification of outliers

GRESB identifies reported consumption values as outliers, if the corresponding consumption intensity (consumption/area) and/or its change over time is abnormal relative to all reported data for the particular property type. Through an in-house developed statistical program, GRESB groups and benchmarks values within their property type, which allows for the identification of consumption values that fall outside normally observed ranges. In the example below, the data point to the right clearly falls outside the normal consumption intensity (consumption/area) of this property type. Beyond reviewing the intensity of consumption, the like-for-like development of consumption over a two-year period is also used to identify abnormal data points.
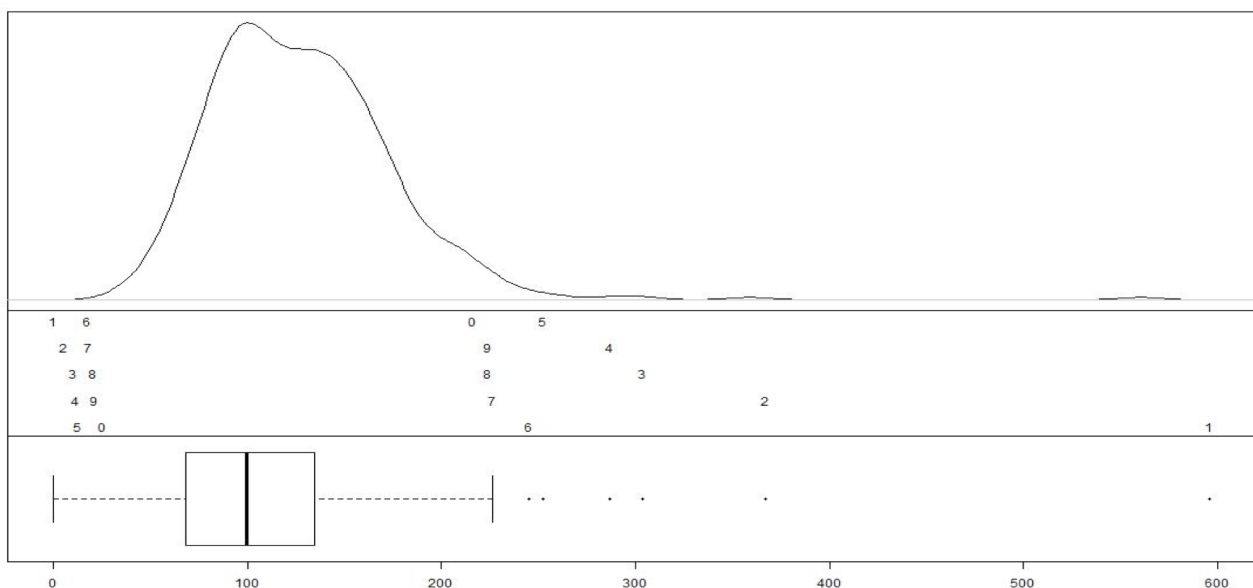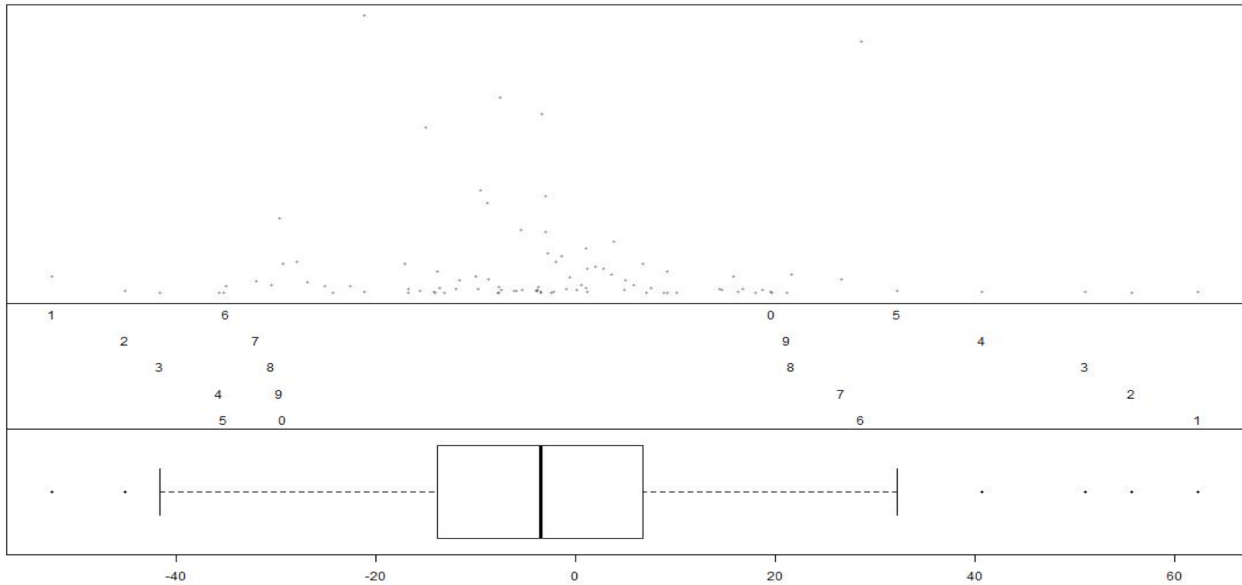


Figure 2 - Data Quality Example: Screenshot of data validation by reviewing energy intensities

Data Quality Example: Screenshot of data validation by reviewing energy intensities

Once the overall portfolio consumption and/or its consumption change over time are identified as abnormal, all underlying data points are reviewed. All GRESB reporting entities go through the same data review and all decisions are automatically protocolled by the system, such that data decisions can always be reviewed.

## Elimination of outliers

GRESB acknowledges that some identified abnormal data points are not the result of incorrect data, but rather the result of unusual business development. To account for this explanation, outliers are not removed if a reasonable explanation by the respondent exists. Once participants enter unusual data points, the GRESB Portal requires a written explanation for those reported values. GRESB reviews all explanations for outliers and considers those before making a final decision on removing the outlier from the dataset. If a data point is identified as outlier and no reasonable explanation is provided, the data point is removed from the participant's assessment, both for scoring and reporting purposes.

# GRESB – Scoring Model

The GRESB Scoring Model is based on an automated system, which uses a technology platform designed for GRESB by a third party that specializes in data analysis software development. The scoring is completed without manual intervention after data input. The maximum score for each Aspect is a weighted element of the overall GRESB Score. GRESB takes into account the unique characteristics of different property types, not only in benchmarking absolute scores, but also in the scoring of a selection of questions.

There are generally two types of indicators in the GRESB assessment: multiple choice indicators and table-based indicators. For the multiple choice indicators, scores are calculated based on the number of relevant check boxes selected and, where evidence is requested, the validation of evidence is used to determine a multiplier for the indicator score. This multiplier limits the number of points a participating entity can achieve if the evidence provided is partially accepted, not accepted or not provided. Most indicators have a maximum score lower than the number of points achievable by selecting all the check boxes, such that it is not necessary to select all check boxes in order to achieve the maximum score. It is also common for indicators to have a section for "other answers." These answers are validated manually, and if not accepted, are not awarded any points.

**Weights allocated to each response:**

- ● Maximum weight
- ⊖ Partial weight
- ○ No weight
- Ⓑ Based on property type average or performance
- ❓ Points depend on answer content
- R Not scored, answer used for reporting purposes only

## Points per Indicator

For indicators where you can select one or more options, GRESB awards points cumulatively for each individual option and then aggregates to calculate a final score for the indicator. For many indicators, this final score is capped at a maximum, which means that it is not necessary to select all answer options. This scoring mechanisms allows for reflecting the diversity among property companies and funds and the variety of their sustainability-oriented activities. Open text boxes (where participants answer through a descriptive text), and indicators for which participants select 'other' answers, are manually validated. Points are awarded for valid responses, based on the quality of the responses.

Every indicator where evidence is provided in a table is scored slightly differently. Generally, the number of data points provided and, if present, the coverage percentage reported (i.e., what percentage of the reporting entity is covered by the data) form the foundation for the calculation of the score. Where possible, GRESB uses benchmarking in its scoring algorithms, such that the threshold to obtain a specific score changes as the data provided to GRESB changes. There are two types of table indicators in the GRESB assessments.

- **Coverage-based indicator tables**, which include indicators related to certifications and implementation of efficiency measures. These indicators are scored based on the reported coverages in the tables and, for building certification indicators, the validation status of the different building certifications. The coverage of a building certification which is fully accepted will lead to a higher score per percentage of coverage as compared a building certification which is only partially accepted.

- **Performance indicator tables,** are scored per property type and take into consideration two scored elements: the data coverage and the like-for-like percentage change in consumption levels. Data coverage is defined as the part of the portfolio for which data is available, per area of the building and per fuel type, relative to the maximum floor area for which consumption data could have been collected. Data coverage is calculated separately for managed assets and for indirectly managed assets and is scored separately. Benchmarks are always constructed within property type and management control. In the case, GRESB further refines the benchmark at the regional level, but falls back to a global benchmark in case of an insufficient number of regional peers (minimum of 12). If the global benchmark does not include a sufficiently large number of peers (minimum of 12), it uses a static model with cutoff points at: 25%, 50% and 75% coverage. Once scored, the results for individual property types and for the managed/ indirectly managed parts of the portfolio are aggregated into an overall score, using the values (measured by Gross Asset Value, GAV) completed in the reporting characteristics section of the GRESB Assessment to weigh the individual scores.

## Other information

- Open text boxes - GRESB awards full, partial or no points for open text box responses. Responses are assessed based on compliance with indicator requirements.

- Document uploads – GRESB uses uploads in the data validation process in two ways: (a) uploads requested to validate the response to the Assessment indicator are either accepted or rejected, and (b) uploads requested as standalone answers to Assessment questions are awarded full, partial or no points.

- Role of validation in scoring – Points are awarded per indicator using the methodology published in this Reference Guide. During the validation process, GRESB checks question responses and allocates a final score for the indicators that take into account whether an answer is accepted in the validation process.

- Indicators with multiple sections – for some indicators, participants must complete multiple data points within a single question e.g. Q17 (energy efficiency measures implemented), where participants must include (i) number of measures implemented, (ii) percentage portfolio covered and (iii) percentage whole portfolio covered. For these indicators participants must complete all sections, as all of these are included in scoring.

- Benchmarked questions - some questions are benchmarked either through:

  ○ a dynamic benchmark based on relative peer group performance (peer group based on property type and region);

  ○ a static benchmark using pre-defined intervals – the answer receives points depending on the position relative to four pre-defined interval points;

  ○ a combination of the previous options.

# GRESB – Score and Rating

The GRESB Score allows for comparison against the global GRESB universe – the GRESB Rating – as well as a more narrowly defined peer group. It represents the aggregation of all GRESB indicators with their respective weight.

## GRESB Dimensions

The overall GRESB score is divided into two dimensions: Management & Policy (MP) and Implementation & Measurement (IM). Management & Policy is defined as "the means by which a company or fund deals with or controls its portfolio and its stakeholders and/or a course or principle of action adopted by the company or fund."

Implementation & Measurement is defined as "the process of executing a decision or plan or of putting a decision or plan into effect and/or the action of measuring something related to the portfolio."
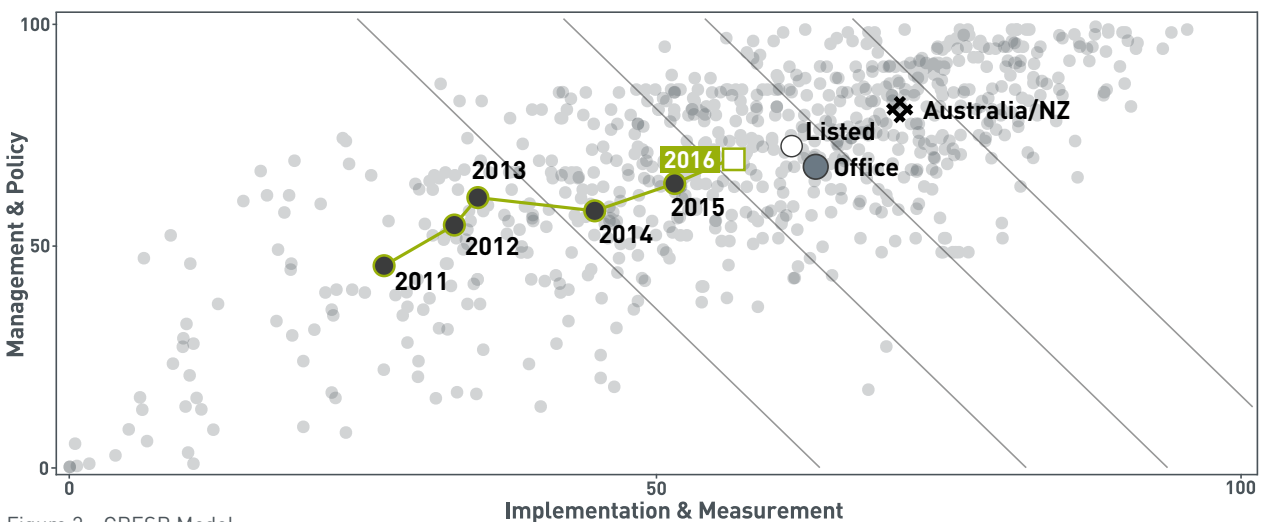


Figure 3 - GRESB Model

Entities with a score higher than 50 on both IM and MP dimensions are called Green Stars and until 2016 received a Green Star logo to communicate on their performance. As performance continues to improve, the average score also climbs every year. In 2016, approximately 60% of the real estate participants received a Green Star status, leaving fewer opportunities for differentiation between truly exceptional leaders. In 2016, GRESB introduced a method for more granular differentiation: the GRESB Rating.

**The GRESB Rating** is an overall measure of how well ESG issues are integrated into the management and practices of companies and funds. The rating is calculated relative to the global performance of all reporting entities – property type and geography are not taken into account. The GRESB Rating thus provides investors with differentiation in overall ESG performance of the global property sector. If certain regions systematically perform better, they will on average have higher-rated companies and funds.

The calculation of the GRESB Rating is based on the GRESB Score and its quintile position relative to the GRESB universe, with annual calibration of the model. If the entity is placed in the top quintile, it will have a GRESB 5-star rating; if it ranks in the bottom quintile, it will have a GRESB 1-star rating etc. In 2016, the cut-off points for the different rating categories are illustrated in Figure 3. As more companies and funds report over time, and as ESG performance improves, the thresholds for reaching the next category will change. The GRESB Rating is thus a relative measure of ESG performance, not an absolute measure.

As the GRESB Rating is relative to the global universe of reporting companies and funds, the Rating is quite stable over time. Figure 4 shows the persistence of GRESB Ratings over the 2011-2016 period, where t can be interpreted as any given reporting year, t+1 the year after, etc. The data shows that the entities with a GRESB 1-star rating had a 70% likelihood of remaining in the lowest category. 26% of those entities received a GRESB 2-star rating after one year, while only 4% improved to a GRESB 3-star rating. Vice versa, the entities with a GRESB 5-star rating had a 72% likelihood of remaining in the highest category. 22% decreased from a 5-star to a 4-star rating and 6% of the entities decreased from a 5-star to a 3-star rating.

The GRESB Rating equally applies to the different GRESB assessments – GRESB Debt, GRESB Developer and GRESB Infrastructure (Asset).

**GRESB Rating (Global)**

| | | Year t+1 rating | | | | |
|---|---|---|---|---|---|---|
| | | Low | 2 | 3 | 4 | High |
| Year t rating | Low | **69.52%** | 26.36% | 4.07% | 1.39% | 0.00% |
| | 2 | 24.29% | **44.35%** | 26.30% | 9.72% | 0.32% |
| | 3 | 4.29% | 24.27% | **41.11%** | 26.04% | 5.68% |
| | 4 | 1.90% | 5.02% | 25.93% | **44.44%** | 21.77% |
| | High | 0.00% | 0.00% | 2.59% | 18.40% | **72.24%** |

Figure 4 - GRESB Rating persistence analysis

## Peer group allocation

Each participant is assigned to a peer group, based on the entity's legal structure (listed/private), property type and geographical location of assets. To ensure participant anonymity, GRESB will only create a peer group if there is a minimum of five peers in the group.

Peer group assignments do not affect a participant's score, but determine how GRESB puts an Assessment participant's results into context. The peer group composition is determined by a simple set of quantitative rules and provides consistent treatment for all participants.

A pre-set threshold determines an entity's geographic location and property type:

- The threshold for property type categorization is set at 75% of the Gross Asset Value (GAV). This means that based on GAV, 75% or more of the Portfolio must be comprised of a single property type. If a participant does not reach the threshold for categorization in a specific sector, it is assigned to the "diversified" category. Within this category, there are three additional subcategories: retail/office, residential/office, and industrial/office. A participant will be assigned to one of these diversified property type subcategories, where the combination of the two property types is at least 75% of GAV.

- GRESB assigns participants to a geographic category using a four-tier system: country, sub-region, region and global. The threshold for assigning a geographic category is set at 60% of GAV. 15 The four-tier systems works as follows:

  ○ Country: Based on GAV, 60% or more of the portfolio must be allocated to a single country;

  ○ Sub-region: If a participant does not reach the threshold for assignment to a specific country, where possible, it is instead assigned to a sub-region, meaning that 60% or more of the portfolio must be allocated to that sub-region. For 2016, GRESB's sub-regional categories are: Nordics, Benelux, West Asia, East Asia, or Southeast Asia;

  ○ Region: If a participant does not reach the threshold for assignment to a sub-region, where possible, it is instead assigned to a region, meaning that 60% or more of the portfolio must be allocated to that specific region. For 2016, GRESB's regional categories are Asia, Australia/NZ, Asia Pacific, Europe, or North America;

  ○ Global: If a participant does not reach the threshold for assignment to a region, it is assigned to "globally diversified."

# Products and Services

## Scorecard

Assessment participants receive a Scorecard that provides a summary of their overall performance, as well as information on each GRESB Aspect. The Scorecard provides information about both absolute and relative performance. The Scorecard also provides high-level information about opportunities to improve ESG performance.
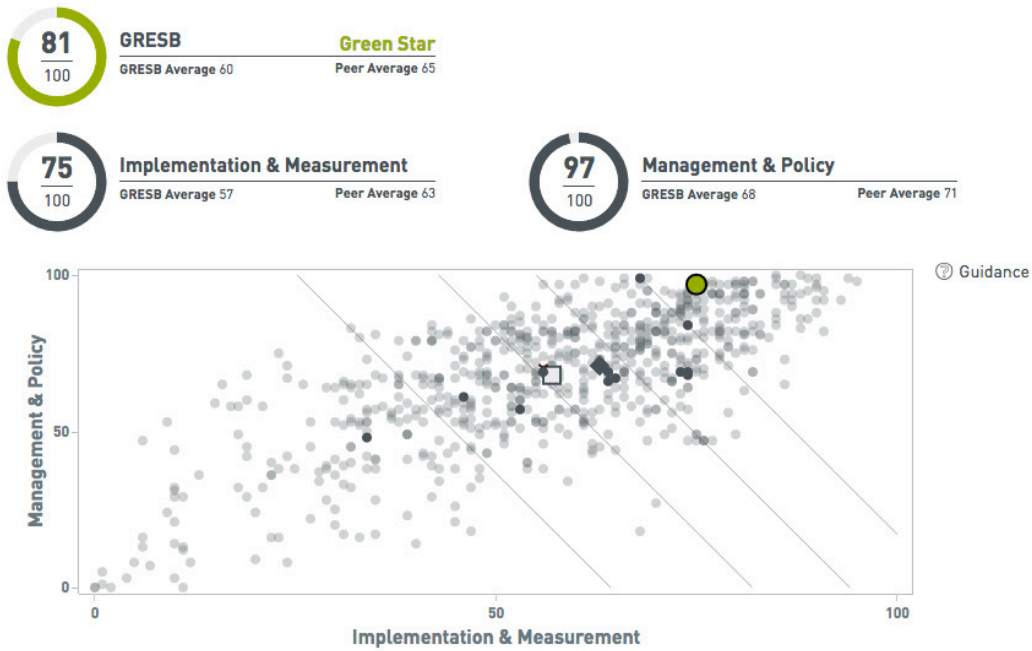


## Benchmark Report

GRESB Benchmark Report provides an in-depth analysis of the sustainability performance of a property company or fund. In addition to the information in the Scorecard, the Benchmark Report contains an extensive and detailed question-by-question comparison with peers. This helps participants to focus on best practices and to develop detailed action plans in order to improve their sustainability performance.

Customized Benchmark Reports (available on request) provide an alternative comparison and ranking based on a customized peer group, which can be selected by participants themselves.

## Portfolio Analysis

The Portfolio Analysis Tool allows members to compare their aggregated portfolio to a self-selected benchmark, based on region, property type and management style. The Portfolio Analysis provides an aggregated overview of the sustainability performance of a portfolio of property companies and/or funds. This tool provides added value specifically for fund managers that participate with a number of entities.

# Governance

GRESB B.V. undertakes the day-to-day management of GRESB's activities. It is a private limited company incorporated in the Netherlands (registration number 55416071), with its registered office at Sarphatistraat 370, 1018 GW, Amsterdam, Netherlands. GRESB B.V. is a wholly owned subsidiary of Green Business Certification Inc., a non-profit corporation incorporated in the United States under the laws of the District of Columbia.

## GRESB Board

The GRESB Board oversees GRESB's governance. It includes one executive director (Chief Executive Officer) and six non-executive directors. The Board is chaired by the chairman of the Board, who is appointed by the Board from among the non-executive directors. Three of the non-executive directors are representatives from GRESB's investor members (Real Estate and Infrastructure). The executive director oversees GRESB's day-to-day business. The non-executive directors supervise the management and performance of the duties of the executive director and supervise the strategic direction of the company. The GRESB Board is administered by GRESB's General Counsel and is supported by two additional observers: the Head of Operations and an Infrastructure Investor member representative.

**Sander Paul van Tongeren**
Managing Director

**Rick Fedrizzi**
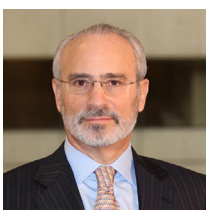GBCI (GRESB Board Chairman)
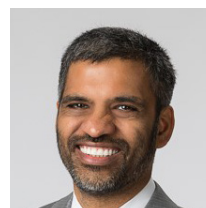
**Mahesh Ramanujam**
GBCI

**Mathieu Elshout**
PGGM Investments
(Investor Member)

**Patrick Kanters**
APG Asset Management
(Investor Member)

**Mie Caroline Holstad**
Norges Bank Investment
Management (Investor Member)

**Steven A. Wechsler**
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