2016 GRESB Snapshot

GRESB
REAL ESTATE

GRESB provides systematic assessment, objective scoring and peer benchmarking of real asset investments around the world. GRESB's unique data on the environmental, social and governance (ESG) performance of property companies and fund managers allows investors to better manage ESG risks and to enhance returns.

759 Entities
201 entities are publicly traded, the remainder are private equity funds and accounts.
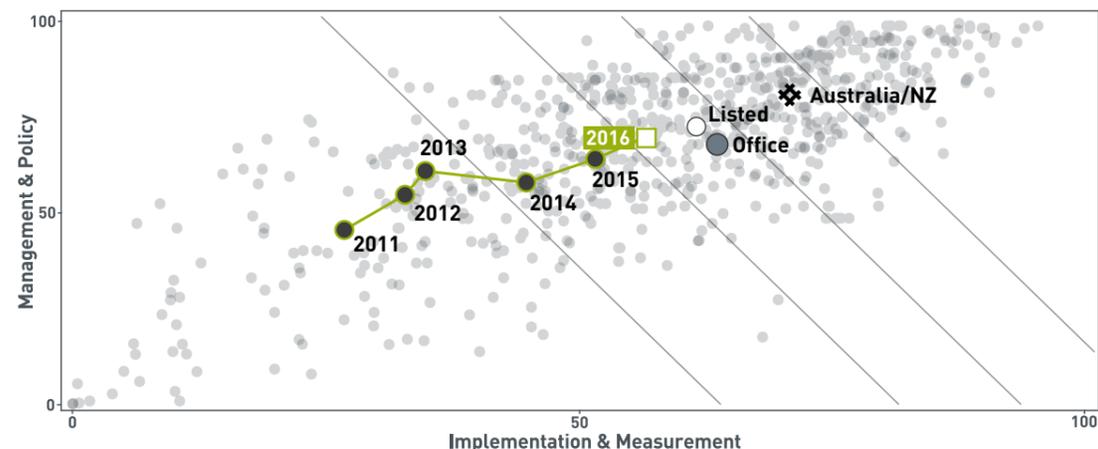
63 Countries
The 2016 GRESB Real Estate Assessment covers 66,000 assets across 63 countries on 6 continents.

$2.8 trillion
The total gross asset value (GAV) of companies and funds reporting to GRESB Real Estate in 2016.

GRESB Model

Management & Policy (y-axis 0–100), Implementation & Measurement (x-axis 0–100). Points: 2011, 2012, 2013, 2014, 2015, 2016. Listed, Office, Australia/NZ.
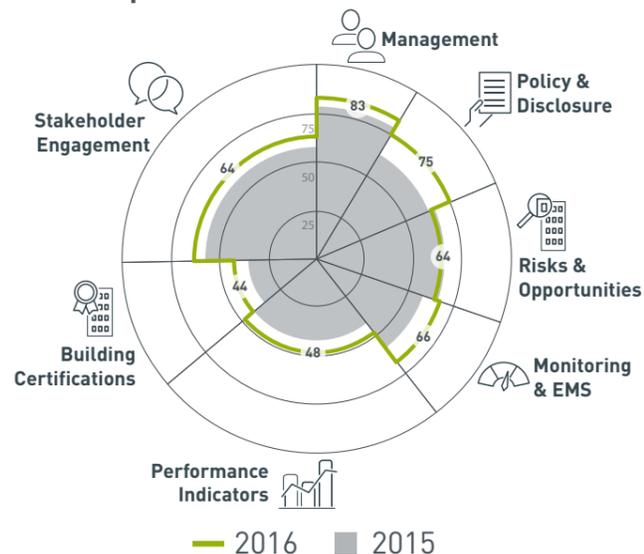
Overall GRESB scores continued to increase. The average GRESB Score increased from 55 to 60.

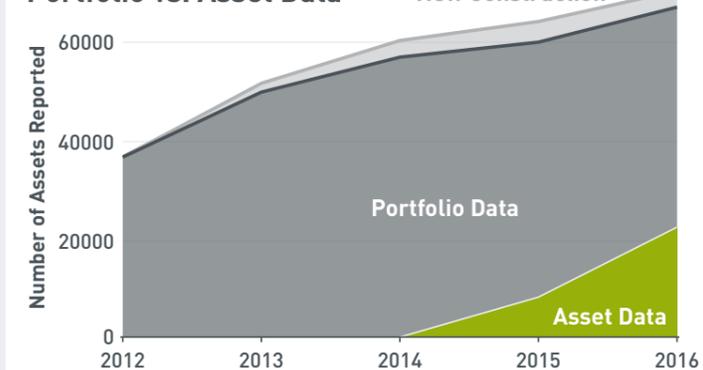**Australia/NZ entities** outperformed all other regions with an average score of 74.

Office companies and funds outperformed other property types with an average score of 66.

Listed property companies outperformed private equity funds by 6 points.

ESG Performance Dynamics

Companies and funds reporting to GRESB significantly improve over time. Entities reporting for 7 years outperform the global average by 12 points.

2010 2011 2012 2013 2014 2015 2016 — (70, 60, 50, 40)

GRESB Rating

The GRESB Rating is an overall measure of how well ESG issues are integrated into the management and holdings of real estate companies and funds. The rating is calculated relative to the global performance of reporting entities.

GRESB ★★★★★ 2016

Carbon Management

- ESG policy includes carbon emissions
- Carbon emissions target in place
- Due diligence process includes carbon emissions
- Risk assessments include carbon emissions
- Data management system in place
- Reporting carbon emissions data
- Offsetting carbon emissions
- Reporting carbon intensity data
- External review of carbon emissions data

0% — % of entities — 100%

2016 Improvement

Right panel: % of entities vs Number of carbon management practices reported (0–9). Australia/NZ, Europe, Asia, North America, Global Average (dotted). Leaders (>= 7 indicators).

GRESB Carbon Management indicators can be considered individually (left panel) or as a set (right panel).

Key Performance Indicators (Total Footprint)

Energy
99TWh
3.5 months of the total electricity supply in the UK

CO₂ (CO_2)
27.9Mt
3.5% of the CO_2 emissions from all global flight activity in 2015

Water
0.47km³ ($0.47 km^3$)
20,000 times the volume of the Lincoln Memorial Reflecting Pool

Waste
15.5Mt
2.5 times the weight of the Great Pyramid of Giza

GRESB Aspects

Management, Policy & Disclosure, Risks & Opportunities, Monitoring & EMS, Performance Indicators, Building Certifications, Stakeholder Engagement. Values: 83, 75, 64, 75, 44, 64, 66, 48. — 2016 ■ 2015
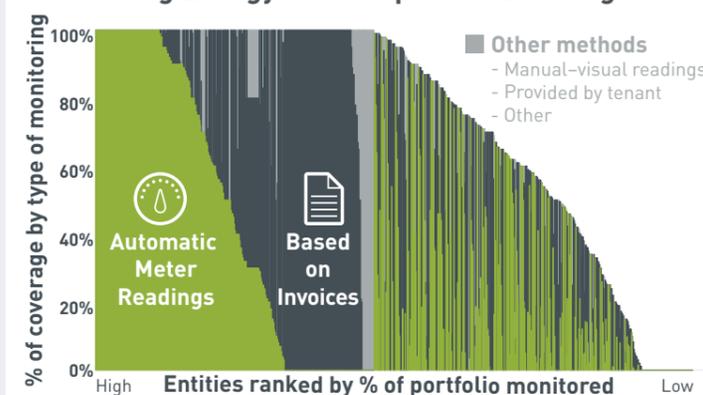
Stakeholder Engagement

The GRESB Real Estate Assessment provides stakeholder engagement indicators addressing employees, tenants, supply chains and communities.
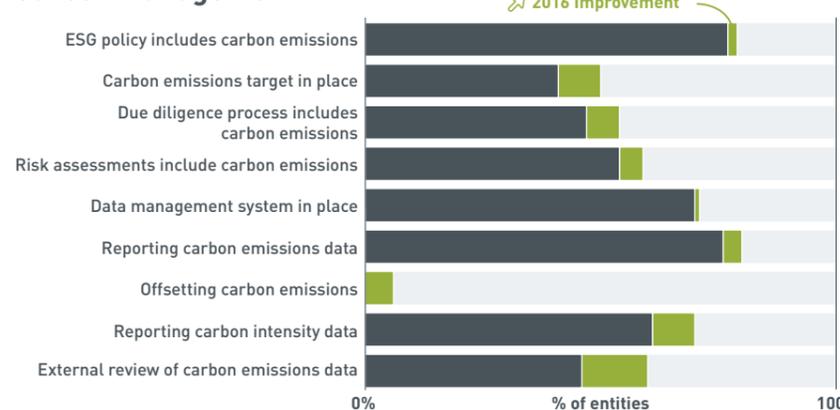

Regions: North America, Europe, Asia, Australia/NZ. Rows: E (Employees), T (Tenants), S (Supply chains), C (Communities). Average Score/Type. 2016 Improvement / 2016 Decline.

Renewable Energy (generated on-site)

0.6% of total energy consumption

438 GWh 2014 — **592 GWh** 2015

Portfolio vs. Asset Data

New Construction

Number of Assets Reported (0–60000), 2012–2016. Portfolio Data, Asset Data.

In 2016, 227 entities reported data on 22,000 individual assets through automated data connections (APIs) or the GRESB Asset spreadsheet. The remainder of the GRESB data was reported at the portfolio level.

Monitoring Energy Consumption in Buildings

% of coverage by type of monitoring (0–100%). Entities ranked by % of portfolio monitored (High to Low). Automatic Meter Readings, Based on Invoices, Other methods (Manual–visual readings, Provided by tenant, Other).
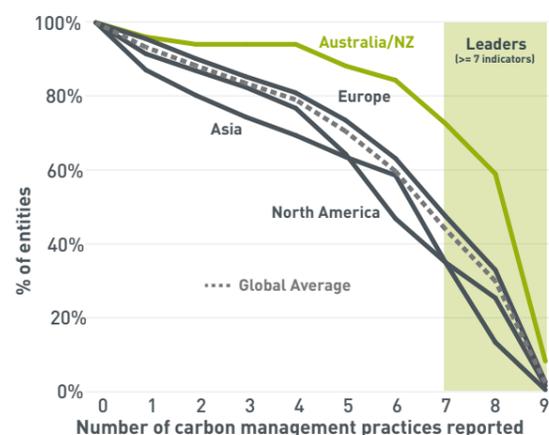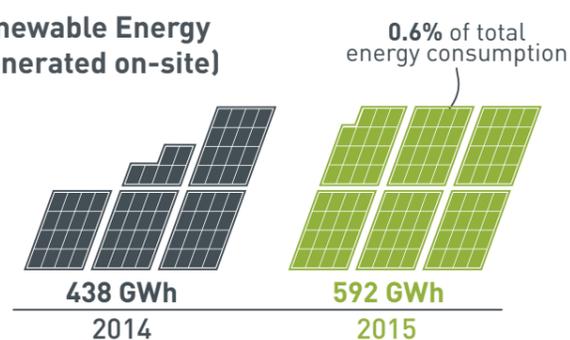
The GRESB Assessment aggregates information about data coverage (i.e., the fraction of a portfolio for which data is available) and data collection strategies (e.g., meters, invoices, etc.). GRESB participants use a mixture of automated meters, invoices and other methods to collect electricity consumption data. Approximately half of GRESB participants have electricity consumption data for their entire portfolio.

Health & Well-being

Promotion of health of employees (y-axis) vs Promotion of health through products and services (x-axis). Leading in internal operations; Leading in both internal operations and products/services; Leading in products/services. GRESB H&W Average.

174 Entities

58 /100 Average Score

62 Leaders

Key Performance Indicators

Like-For-Like Change
2014-2015 (relative)

Intensities
2015

ENERGY

-997GWh
-1.2%

Equivalent of **73,988 homes**

■ kWh/m² ■ MWh/$1M GAV
┄┄ GRESB Averages

	Retail	Office	Industrial	Residential	Hotel	Other
kWh/m²	158	171	34	102	357	279
MWh/$1M GAV	34	37	44	31	104	90

GRESB Averages: 158 / 42

CARBON EMISSIONS

-427kt
-2%

Equivalent of **90,197 passenger cars** CO₂

■ kg/m² ■ tonnes/$1M GAV
┄┄ GRESB Averages

	Retail	Office	Industrial	Residential	Hotel	Other
kg/m²	40	66	4	27	97	63
tonnes/$1M GAV	10	14	4	7	28	29

GRESB Averages: 45 / 12

WATER

-3hm³
-1.9%

Equivalent of **1,200 Olympic pools**

■ l/m² ■ m³/$1M GAV
┄┄ GRESB Averages

	Retail	Office	Industrial	Residential	Hotel	Other
l/m²	1,088	571	146	921	2,236	512
m³/$1M GAV	239	128	203	410	644	152

GRESB Averages: 810 / 229

WASTE

Change in % of landfill waste

-135kt
-1.97%

Equivalent of **14,963 truck loads**

■ kg/m² ■ tonnes/$1M GAV ┄┄ GRESB Averages

	Retail	Office	Industrial	Residential	Hotel	Other
kg/m²	127	32	1	7	11	14
tonnes/$1M GAV	27	6	1	2	3	2

GRESB Averages: 65 / 16

GRESB defines "like-for-like" as the fraction of a portfolio continuously owned by an entity for at least 24 months. Like-for-like measurements represent a relatively stable subset of a portfolio, and they may better reflect management actions to improve performance. GRESB like-for-like metrics do not directly account for variation in weather, occupancy or other factors.

GRESB provides two complementary measures of portfolio-level resource productivity, including environmental impact (energy, GHG, water and waste) per floor area and per dollar of gross asset value (GAV). Resource productivity varies between property types. Lower intensities indicate relatively less environmental impact per unit floor area or per dollar of asset value.

GRESB Investor and Bank Members

Logos of GRESB Investor and Bank Members: Aberdeen, ABN·AMRO, actiam, AEGON Asset Management, AIMCo (Alberta Investment Management Corp.), AP FÖRSTA AP-FONDEN, Andra AP-fonden (Second Swedish National Pension Fund - AP2), AP3 Third Swedish National Pension Fund, AP FJÄRDE AP-FONDEN, apg, ARCADIS PENSIOENFONDS, atp=, AustralianSuper, AVIVA INVESTORS, Blue Sky Group, BMO Global Asset Management, BNP PARIBAS, Bouwinvest, CalPERS, catholic super, CBRE CLARION SECURITIES, CBRE GLOBAL INVESTORS, cbus super fund, CenterSquare Investment Management, COHEN & STEERS, cube Infrastructure Fund, DBJ, HOOPP Healthcare of Ontario Pension Plan, HERMES INVESTMENT MANAGEMENT, HESTA An Industry SuperFund, ING, Ivanhoé Cambridge, KAMES CAPITAL, KEMPEN & CO Merchant Bank, LOCAL GOVERNMENT SUPER, MAJID AL FUTTAIM, mirova Responsible Investing, MN, NORGES BANK INVESTMENT MANAGEMENT, AN OMERS WORLDWIDE COMPANY, OXFORD, ONTARIO TEACHERS' PENSION PLAN, Pensioenfonds Detailhandel, PensionDanmark, PGGM, PRESIMA, NN, ROBECO The Investment Engineers, SEB TRYGG LIV, SPP, SWECO, THE CROWN ESTATE, TOWNSEND GROUP, TKP Investments, UAW RETIREE Medical Benefits Trust, UBS, USS, VFMC Victorian Funds Management Corporation, WELLINGTON MANAGEMENT

$7.6 trillion
Institutional capital represented by 58 GRESB Investor Members

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 200 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.