FTSE Russell & Measurabl Listed Real Estate Data Index Data FAQ

Following the relationship announcement FTSE Russell and Measurabl announce relationship | LSEG and client notices released, FTSE Russell has prepared this document to address any frequently asked questions on Measurabl, their listed real estate ESG data product and the application of this data to the FTSE EPRA Nareit Green Index Series and FTSE EPRA Nareit Green Target Index Series.

1. Who is Measurabl?

Launched in 2013, Measurabl is now the world's most widely adopted ESG (environmental, social, governance) data management solution for real estate. Customers use Measurabl to measure, manage, and report ESG data on more than 17 billion square feet (1.5 billion square metres) of real estate across 93 countries. As such, Measurabl has the largest database of actual asset level ESG data on the market, with more than $2 trillion of asset value managed against it.

This database of real estate data powers a machine-learning model with the capability to estimate sustainability data for virtually every building in the world, with high accuracy. Measurabl aggregates its asset-level data to provide company-level ESG data for all companies in the FTSE EPRA Nareit Developed Index.

Having secured $93m series D funding earlier in 2023, Measurabl is dedicated to the continued expansion of their market-leading ESG solutions for real estate, continued international expansion, and global partnerships. (source: https://www.measurabl.com).

2. What is covered within the Measurabl Listed Real Estate Data product?

Measurabl's Listed Real Estate Data product is constructed using a bottom-up approach from its asset-level data. Relying on reported data and estimation techniques to collect building attributes, Measurabl's machine learning model utilises their own portfolio of actual asset data to estimate energy consumption and carbon output. These figures are supplemented by collected LEED and BREEAM green building certification information, and ordinances. These asset-level metrics are then rolled-up to listed entity-level figures, applicable for use in index construction. The full set of data is listed below, and can be found at Solutions - Data - Measurabl:

- **Energy Use and Carbon Output** - Measurabl's proprietary machine learning models produce energy and carbon estimates with high accuracy.
- **Green Building Certifications** - Find out whether properties have earned green building certifications such as LEED and BREEAM which indicate that they have met specific environmental, energy, human health, and other standards in their design, construction, and performance. Measurabl calculates the percentage of a company's portfolio that is green-building certified**.**
- **Exposure to Local Ordinances** - Governments are increasingly imposing carbon caps and energy efficiency requirements on real estate. Measurabl's data helps to determine how these laws affect properties and portfolios.
- **Physical Climate Risk** - Measurabl has integrated global physical climate risk data to calculate asset-level exposure to heat stress, earthquakes, flooding, and other factors related to climate change.*

FTSE Russell and Measurabl are also collaborating on multiple other potential enhancements to the listed real estate ESG dataset offering, which would further improve the scope and quality of data available for investment use cases.

*FTSE Russell does not subscribe to receive Physical Climate Risk Data

3. What are the Key Issues with Listed Real Estate Data and how are they addressed in the Measurabl Data?

A lack of comprehensive data is among the primary roadblocks. At the asset level, investors are faced with a hard-to-navigate array of competing green certification schemes with varying coverage. Among listed real estate companies in the FTSE EPRA Nareit Developed Index, just 62% have reported Scope 1+2 emissions figures, with a significant size bias among those reporting (Source: FTSE Russell Carbon Emissions Data). While real estate companies have made tangible progress with disclosing increasingly comprehensive, portfolio-level sustainability metrics, large coverage gaps remain. Many market leaders now disclose third-party assured, portfolio-level data on carbon emissions; energy consumption; water consumption; waste generation; and green certified properties. However, such data is still not available for many companies, and the quality of disclosure varies where present.

Measurabl's machine learning data model, based on the world's largest real estate ESG data portfolio on more than 17 billion square feet of real estate, allows for a different approach. Measurabl uses a three-step process to derive its building-level energy and carbon estimates. First, energy usage estimates are computed using a machine learning model and Measurabl's database. The database includes time series energy usage records for tens of thousands of buildings and the various spaces within these buildings, across more than 100 primary use types. More specifically, the model is built on data from tens of thousands of buildings consisting of hundreds of thousands of monthly data points in the Measurabl database, selected based on data quality. Additionally, the model makes use of third-party monthly weather data.

Next, an energy mix for each building is computed based on similar buildings in Measurabl in terms of use type and location. The energy usage types that are trackable within Measurabl include electricity, fuel, and district. Finally, building energy usage estimates are transformed using the computed energy mix and Measurabl's GHG Methodology to derive estimated carbon emissions. The final estimates produced for a particular building represent the expectation of how much energy that building consumed as well as the carbon it produced over the course of a specified historical time period.

The result is a timely, accurate and consistent provision of data on a monthly basis, covering more than 99% of companies by market cap within the FTSE EPRA Nareit Developed universe. Measurabl's data is also quality assured within their SaaS-based application, increasing the validity and trustworthiness of figures provided across the universe.

4. What was the Process behind FTSE Russell's decision to sign a contract for Measurabl Data?

FTSE Russell assesses third-party data providers on an ongoing basis. Having seen developments in the real estate data space,FTSE Russell reached out to a broad range of climate real estate data providers and assessed those who engaged against a defined set of requirements. Measurabl's strong responses to these requirements precipitated an extensive data due diligence process covering data content, supporting data processes, company fundamentals and technology. Final sign-off on the decision was provided at FTSE Russell's index Governance Board.

5. Will there be any Methodology Updates to indexes as part of the change in data providers?

The current construction methodology of the FTSE EPRA Nareit Green Index Series and FTSE EPRA Nareit Green Target Index Series utilises the following four metrics containing real estate ESG specific data:

- Carbon emissions per square meter floorspace
- Energy intensity per square meter floorspace
- Percentage of floorspace covered by eligible green certification
- Carbon emissions per enterprise value including cash (EVIC)

Measurabl's listed real estate dataset contains sufficient data for the production of all four of the above metrics, allowing for the new dataset to be implemented without applying any changes to index methodologies. However, Measurabl's dataset also contains additional metrics that were not previously

available for use in construction, which would allow the enrichment of current methodologies. Confidence intervals on estimated datapoints and Scope 3 carbon emissions data (currently in development) are just some examples of potential methodological enhancements that could be applied to the index series.

Potential changes to index methodologies would first be investigated within FTSE Russell's Sustainable Investment Product and Index Research teams, to ensure that any change made would help the index achieve its stated sustainability and performance objectives.

6. What are the timelines for Implementation of Measurabl data into FTSE Russell's indexes?

FTSE Russell is planning to incorporate Measurabl data into all indexes within its EPRA Nareit Green Index Series and EPRA Nareit Green Target Index Series on or ahead of their rebalances occurring September 23rd 2024.

Index name	Index code
FTSE EPRA Nareit Developed Green EU CTB Index	FENGREC
FTSE EPRA Nareit Developed Europe ex UK Green EU CTB Index	FENGXUK
FTSE EPRA Nareit Developed Europe ex UK Green EU CTB Net Tax Index	FENGXUKN
FTSE EPRA Nareit Developed Green EU PAB Index	ENGLPAB
FTSE EPRA Nareit Developed Green Index	FENGRE
FTSE EPRA Nareit Developed Green Focus Index	FENGRF
FTSE EPRA Nareit IdealRatings Developed REITs Islamic Green Index	FENGRRI
FTSE EPRA Nareit IdealRatings Developed REITs Islamic Green RIC Capped Index	FENGRIC
FTSE EPRA Nareit Japan REITs Green Focus Select Index	FENJRGF
FTSE EPRA Nareit Developed Green Target Index	FENDGT
FTSE EPRA Nareit Developed Green Low Carbon Target Index	FENGLC

Ahead of the selection of a timeline for implementation, FTSE Russell will perform index simulation analysis to judge impact and propose implementation plans based on this. FTSE will share the results of these simulations and any implementation proposal with index clients in early 2024 prior to confirming exact timelines.

7. What is the anticipated impact to index outcomes of the Change?

The current index methodologies in the FTSE EPRA Nareit Green and Green Target index series utilise Geophy datapoints in construction, which are estimated using national grid and energy mix data. As both providers are estimating data using different modelling approaches it can be expected that the transition between the two will result in a one-off instance of index turnover as a result of these different estimations.

Simulations will be performed ahead of the transition in order to inform index clients of any anticipated turnover from the change, should these simulations indicate that the switch would affect the index characteristics such that an alternative methodology would better suit the index objectives, such a change will also be investigated.

For further information please contact FTSE Russell Client Services at info@ftserussell.com or call:

Australia	+61 (0) 2 7228 5659
Hong Kong	+852 2164 3333
Japan	+81 3 6441 1430
London	+44 (0) 20 7866 1810
New York	+1877 503 6437

Alternatively please visit our website at lseg.com/ftse-russell