



GMO HORIZONS: A QUANTITATIVE SOLUTION FOR SUSTAINABLE INVESTING

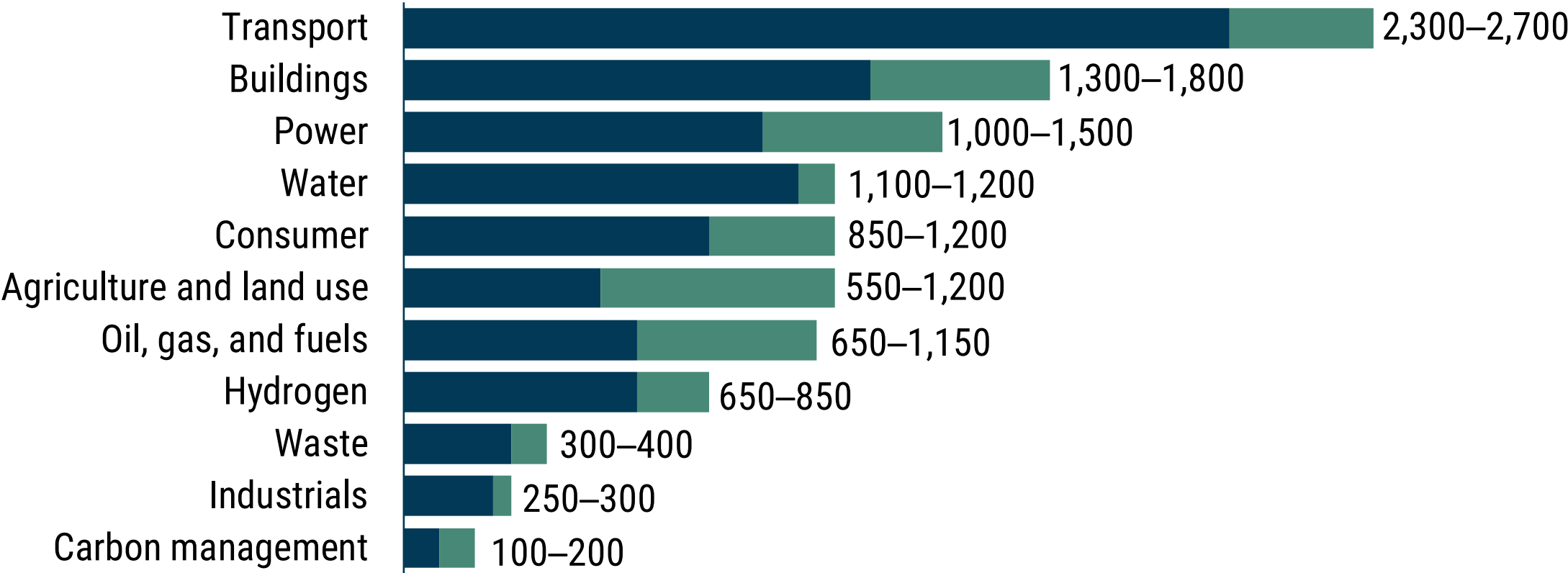
Chris Heelan

GMO

BREADTH OF OPPORTUNITIES

Green is much more than just wind turbines and solar panels

POTENTIAL MARKET SIZE IN 2030



Range in \$ billions

Source: [McKinsey Sustainability](#); [McKinsey & Company](#)

INTEGRATING CLIMATE OPPORTUNITIES INTO GMO HORIZONS

Index Insights

Sustainable Investment | Climate

FTSE Russell

Weighted Average Green Revenue (WAGR):

Integrating climate solutions into portfolio construction

June 2023

ACKNOWLEDGEMENTS

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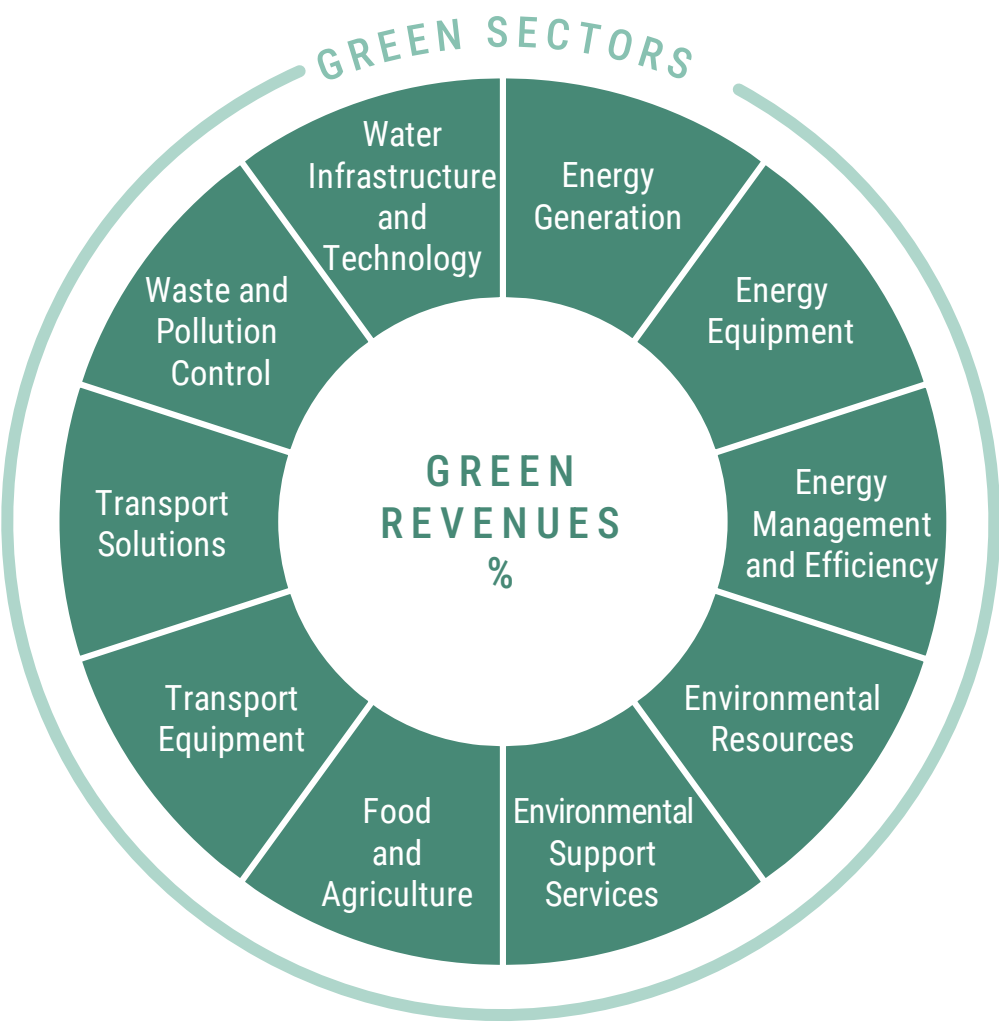
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Source: L. Dai, J. Kooroshy, R. Teo, W. De Rui, D. Ng, K. Hsu, C. Heelan, T. Wheeler, "Weighted Average Green Revenue (WAGR): Integrating climate solutions into portfolio construction", FTSE Russell, GIC, and GMO Research, 2023

GMO HORIZONS AS A CORE SUSTAINABLE SOLUTION

Horizons offers exposure to climate opportunities with lower emissions, risk, and fees

| Name | Green Revenue | Ave. Relative Sector Exposures | Ave. Relative Country Exposures | YTD Returns ¹ | Expense Ratio | Emissions Footprint Scope 1 + GMO Indirect |
|--|---------------|--|--|--|---|---|
| GMO Horizons | 27% | 0.01  | 0.00  | 14.34%  | 0.20%  | 232  |
| Global Clean Energy | 69% | 0.11 | 0.01 | -28.01% | 0.41% | 659 |
| Clean Edge Green Energy | 62% | 0.08 | 0.01 | -22.10% | 0.58% | 337 |
| Clean Power | 45% | 0.11 | 0.01 | -20.51% | 0.45% | 1045 |
| Environmental Infrastructure and Industrials | 78% | 0.14 | 0.01 | 6.52% | 0.47% | 791 |
| Sustainable Development Goals | 35% | 0.09 | 0.02 | -1.28% | 0.49% | 985 |
| MSCI ACWI | 9% | 0.00 | 0.00 | 16.60% | -- | 463 |

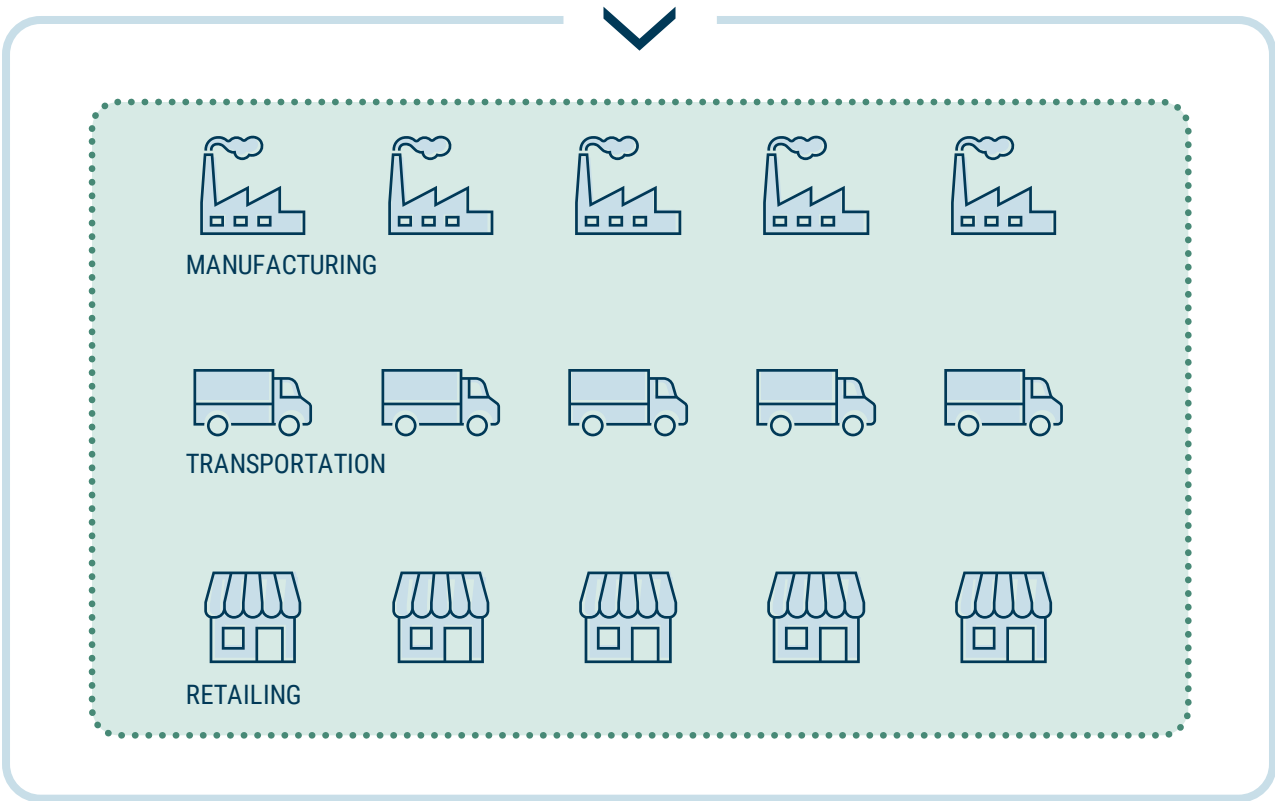
Sources: GMO, FTSE Russell, MSCI, iShares, First Trust, State Street

Results for GMO Horizons are based on simulated backtest holdings. Emissions footprint reported in units of MT CO₂e / \$1 million market cap. ¹Year to date returns are not annualized. Year to date returns for Global Clean Energy based on "Cumulative Total Return (%) YTD" as of 2023-11-30 (Retrieved 2023-12-19). Expense ratio for Global Clean Energy based on "Expense Ratio" (Retrieved on 2023-12-19). Year to date returns for Clean Edge Green Energy based on "Fund Performance: Net Asset Value (NAV): YTD" as of 2023-11-30 (Retrieved on 2023-12-19). Expense ratio for Clean Edge Green Energy based on "Gross Expense Ratio" (Retrieved on 2023-12-19). Year to date returns for Clean Power based on "Fund Performance: Fund Before Tax: NAV YTD" as of 2023-11-30 (Retrieved on 2023-12-19). Expense ratio for Clean Power based on "Gross Expense Ratio" (Retrieved on 2023-12-19). Year to date returns for Environmental Infrastructure and Industrials based on "Cumulative Total Return (%) YTD" as of 2023-11-30 (Retrieved on 2023-12-19). Expense ratio for Environmental Infrastructure and Industrials based on "Expense Ratio" (Retrieved on 2023-12-19). Year to date returns for Sustainable Development Goals based on "Cumulative Total Return (%) YTD" as of 2023-11-30 (Retrieved on 2023-12-19). Expense ratio for Sustainable Development Goals based on "Expense Ratio" (Retrieved on 2023-12-19).

MANAGING TOTAL EMISSIONS RISK

Available solutions miss ~80% of emissions risk

Retailer A
(vertically integrated)



Retailer B



Scope 1 + Scope 2: 

Scope 3: 

GMO INDIRECT EMISSIONS



ESTIMATING VALUE CHAIN EMISSIONS FOR PORTFOLIO CONSTRUCTION

The GMO Indirect Emissions Model

Christopher Heelan, Kenneth Hsu, Timothy Wheeler, and Deborah Ng | July 2023

EXECUTIVE SUMMARY

Climate change presents a significant source of transition risk for investors as companies face increasing pressures from regulators, consumers, and shareholders to lower their carbon footprints. To fully measure portfolio exposure to emissions risk, we believe investors must go beyond capturing scope 1 and scope 2 emissions to consider all indirect emissions exposure across end-to-end company value chains.

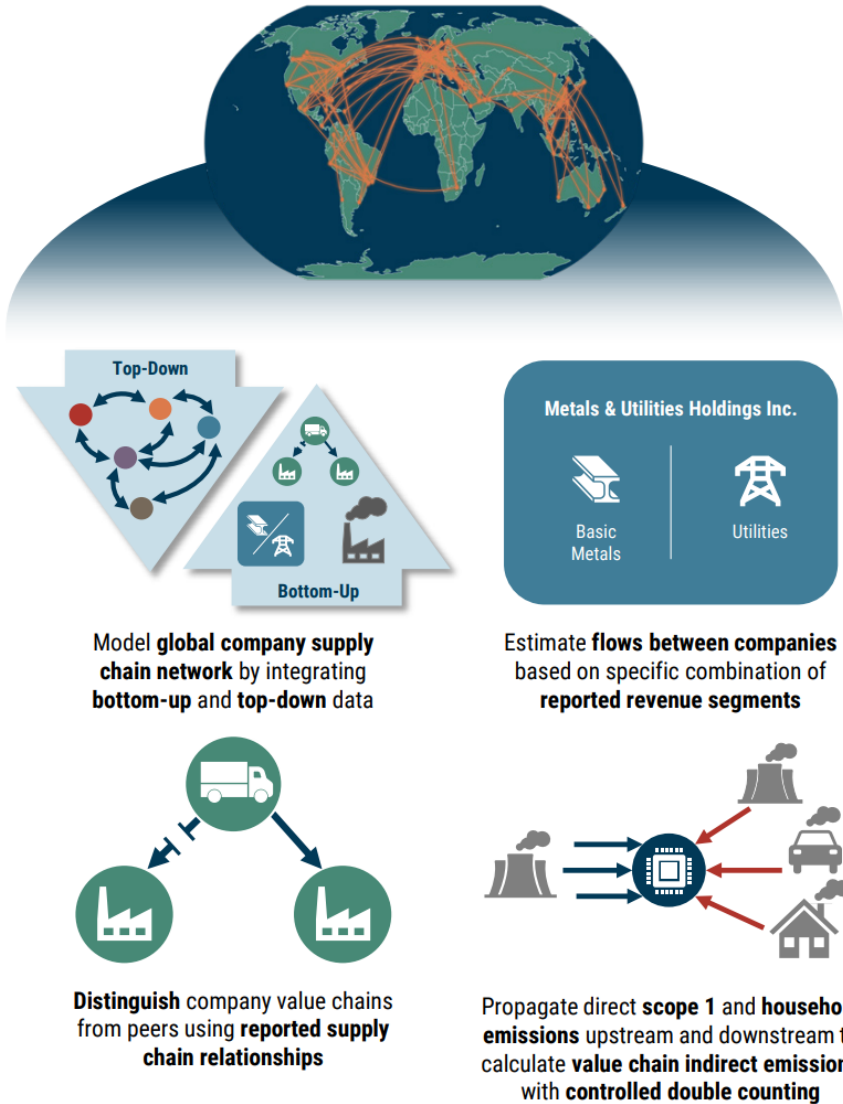
However, we believe reported scope 3 data used for measuring indirect emissions is inadequate for this purpose. Inconsistent scope 3 estimation methodologies prohibit the comparison of values across companies, which interferes with portfolio construction.

To address this important challenge, we have developed the GMO Indirect Emissions model, a proprietary method for estimating emissions embodied in company value chains. Our novel approach aggregates underlying direct scope 1 and household emissions across end-to-end value chains and has the following advantages over existing practices:

- Ensures consistent double counting across all companies and enables tracing the origin of all indirect emissions.
- Directly incorporates reported company supply chain relationships, industry segment revenue, and scope 1 emissions into a global company-level supply chain model.
- Distinguishes companies from their peers based on characteristics of their specific value chains, instead of relying on traditional intensity metrics.

By estimating all direct and indirect flows between companies with a consistent global methodology, the GMO Indirect Emissions model provides our investment teams with a unique and powerful tool for quantifying, tracking, and managing portfolio carbon transition risk.

In this paper, we explain why measuring indirect emissions is so important to asset managers – and so challenging currently – and we introduce the GMO Indirect Emissions model as a solution to these challenges.¹

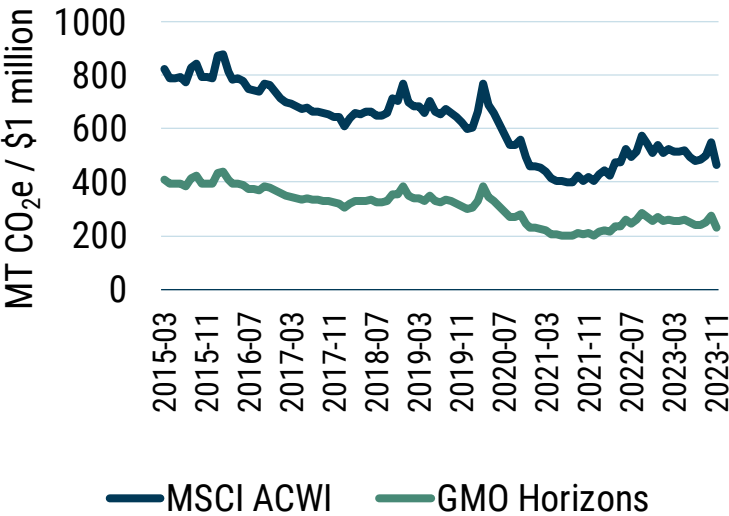


GMO HORIZONS

A solution which considers emissions, opportunities, and risks

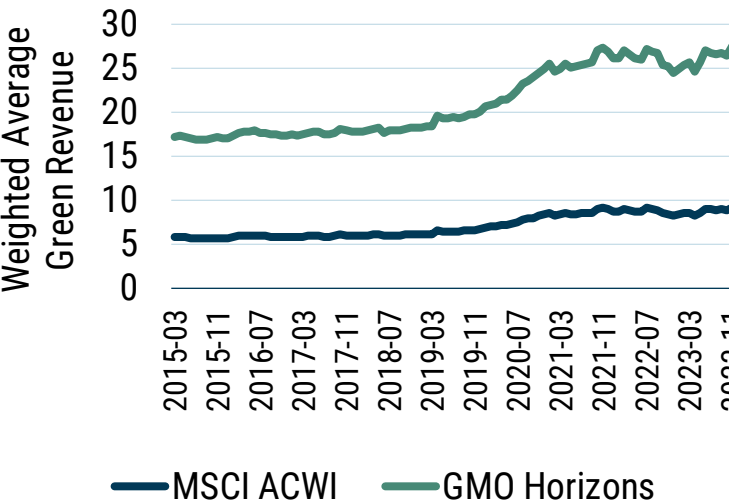
Carbon efficiency

Reduced total emissions intensity with complete accounting and attribution



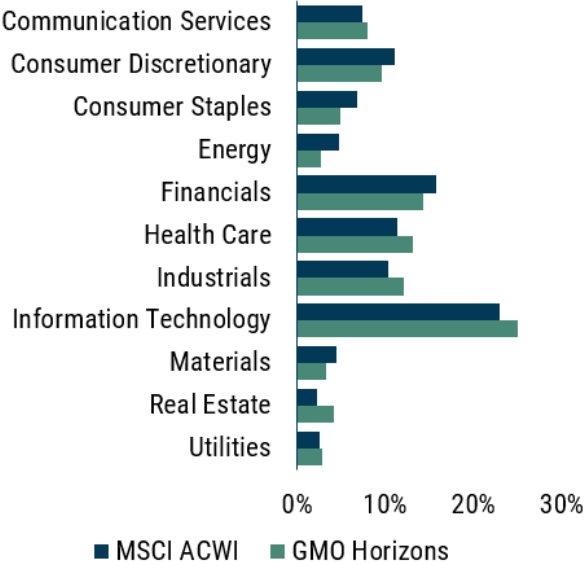
Climate opportunities

Increased exposure to companies with green products and services



Diversified portfolio

Neutralise sector, style, and country exposures to lower risk.



Source: GMO, MSCI, FTSE Russell, Trucost. Emissions intensity and weighted average green revenue calculations for GMO Horizons are based on simulated backtest holdings. MSCI data may not be reproduced or used for any other purpose. MSCI provides no warranties, has not prepared or approved this report, and has no liability hereunder. Please visit <https://www.gmo.com/americas/benchmark-disclaimers/> to review the complete benchmark disclaimer notice.

REDUCING TOTAL EMISSIONS

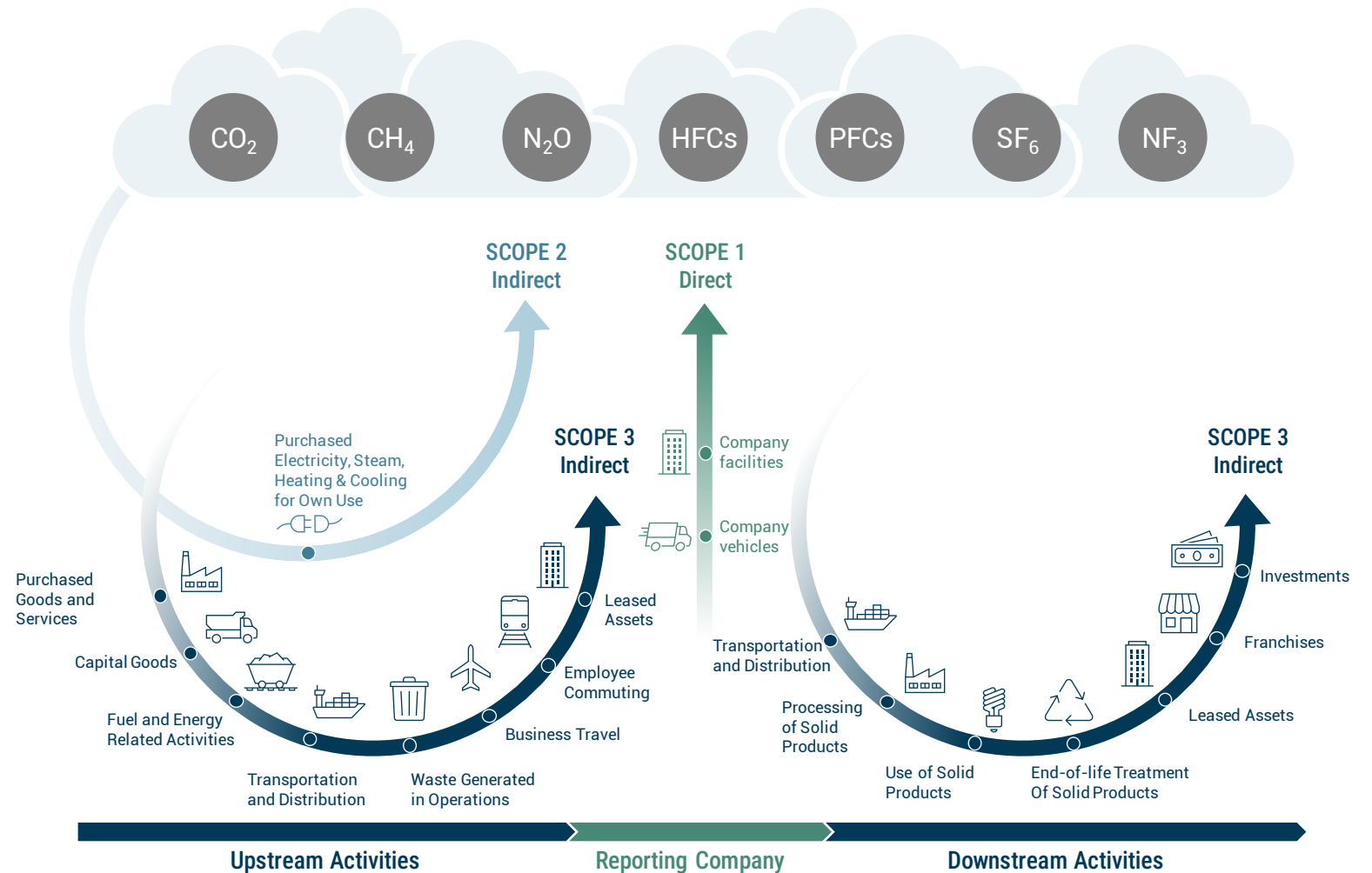


INDIRECT EMISSIONS ARE 82% OF TOTAL COMPANY EMISSIONS

Emissions exposure across end-to-end company value chains

Carbon transition risk

- Drivers associated with **transition to greener economy** that pose **economic or financial risks** to companies
- E.g., **new climate change regulations** resulting in **smaller margins** for some companies



Source: Greenhouse Gas Protocol, Corporate Value Chain (Scope 3) Accounting and Reporting Standard, 2011

PROBLEMS WITH REPORTED SCOPE 3

Not suitable for portfolio construction

- Not comparable across companies
- Lack of transparency and attribution

Commercial models inherit same problems as reported data

Opportunity to build solution for asset owners and managers

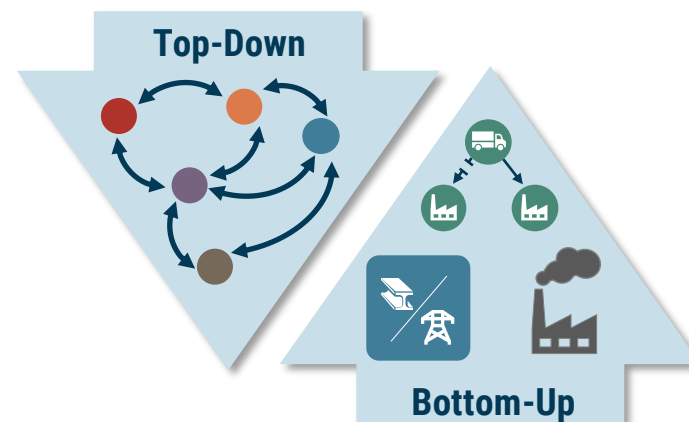


“ Use of this standard is intended to enable comparisons of a company's GHG emissions over time. **It is not designed to support comparisons between companies based on their scope 3 emissions.** ”

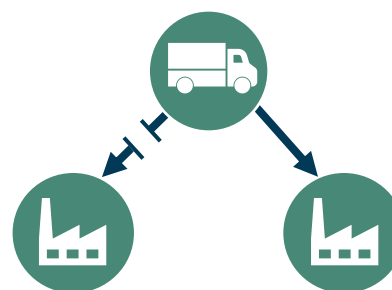
— Greenhouse Gas Protocol, Corporate Value Chain (Scope 3) Accounting and Reporting Standard, 2011

Source: Greenhouse Gas Protocol, Corporate Value Chain (Scope 3) Accounting and Reporting Standard, 2011

GMO INDIRECT EMISSIONS MODEL



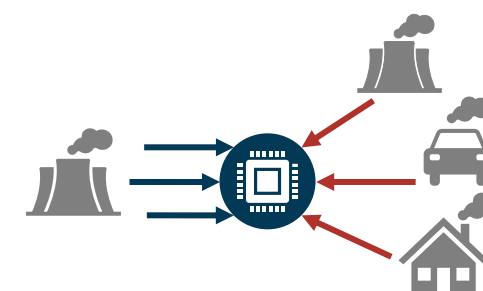
Model **global company supply chain network** by integrating **bottom-up** and **top-down** data



Distinguish company value chains from peers using **reported supply chain relationships**



Estimate **flows between companies** based on specific combination of **reported revenue segments**



Propagate direct **scope 1** and **household emissions** upstream and downstream to calculate **value chain indirect emissions** with **controlled double-counting**

TRANSPARENCY AND ATTRIBUTION

Example: PetroChina Co Ltd



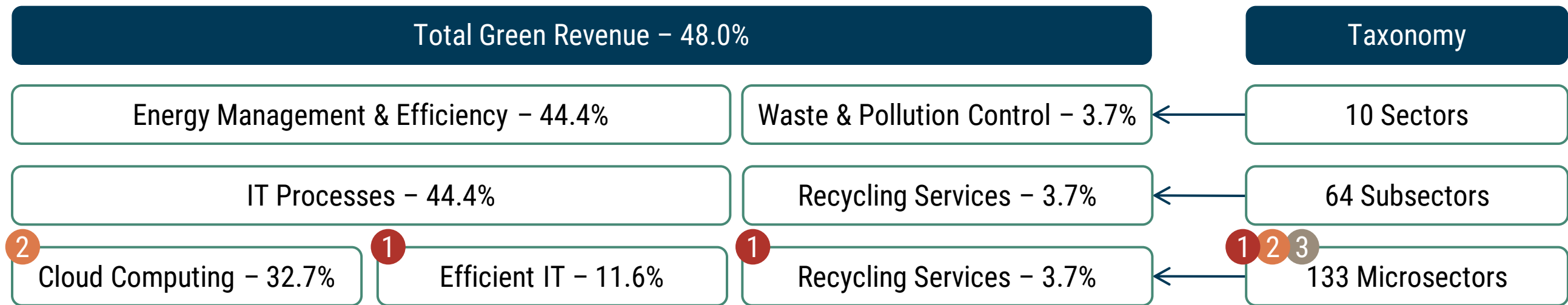
CAPTURING CLIMATE OPPORTUNITIES



FTSE RUSSELL GREEN REVENUES

Comprehensive taxonomy for green products and services

EXAMPLE: HP INC.



SUMMARY

- Covers 16,000+ companies (99% global market cap)
- Taxonomy is well-aligned with EU Environmental Objectives
- Each microsector assigned a tier (assessment of environmental impact)

TIERS

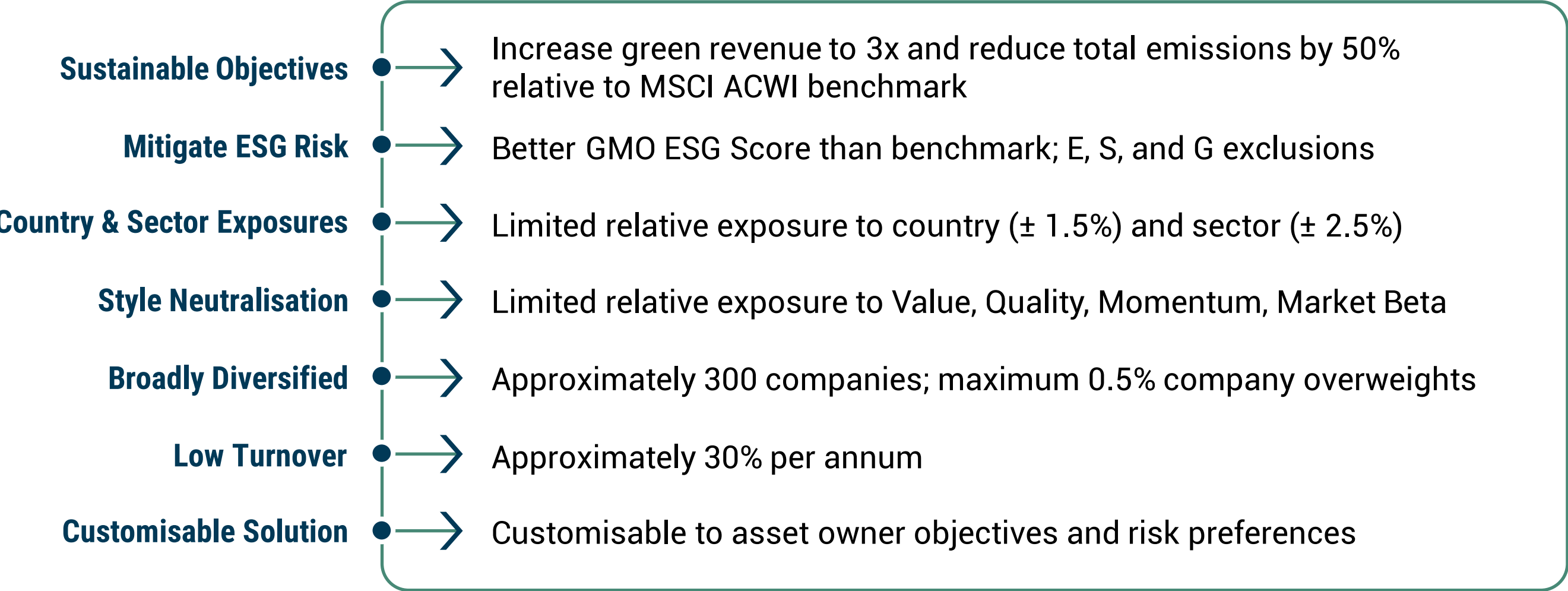
- 1 – Clear Impact
- 2 – Net Positive
- 3 – Limited Impact

FTSE Russell Green Revenue Data for HP Inc. for the 2021 financial year.

GMO HORIZONS PORTFOLIO

GMO HORIZONS PORTFOLIO CONSTRUCTION HIGHLIGHTS

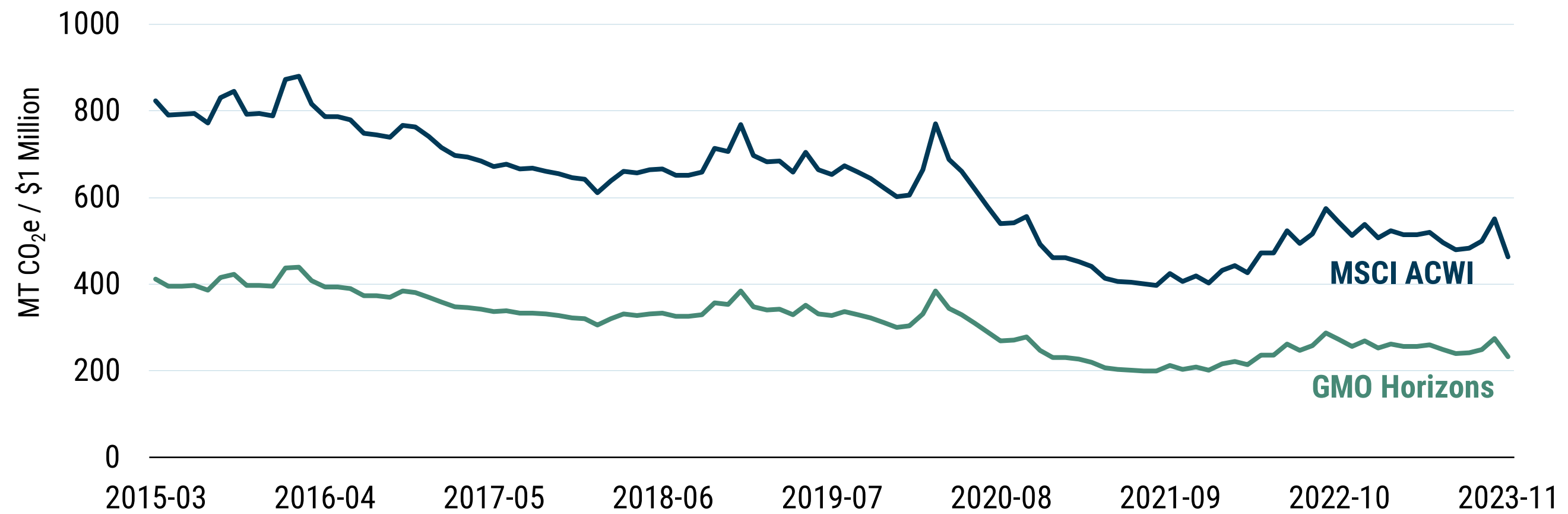
Thoughtful portfolio construction balances sustainability goals across multiple dimensions



The above are internal guidelines and are subject to change.

TOTAL EMISSIONS INTENSITY

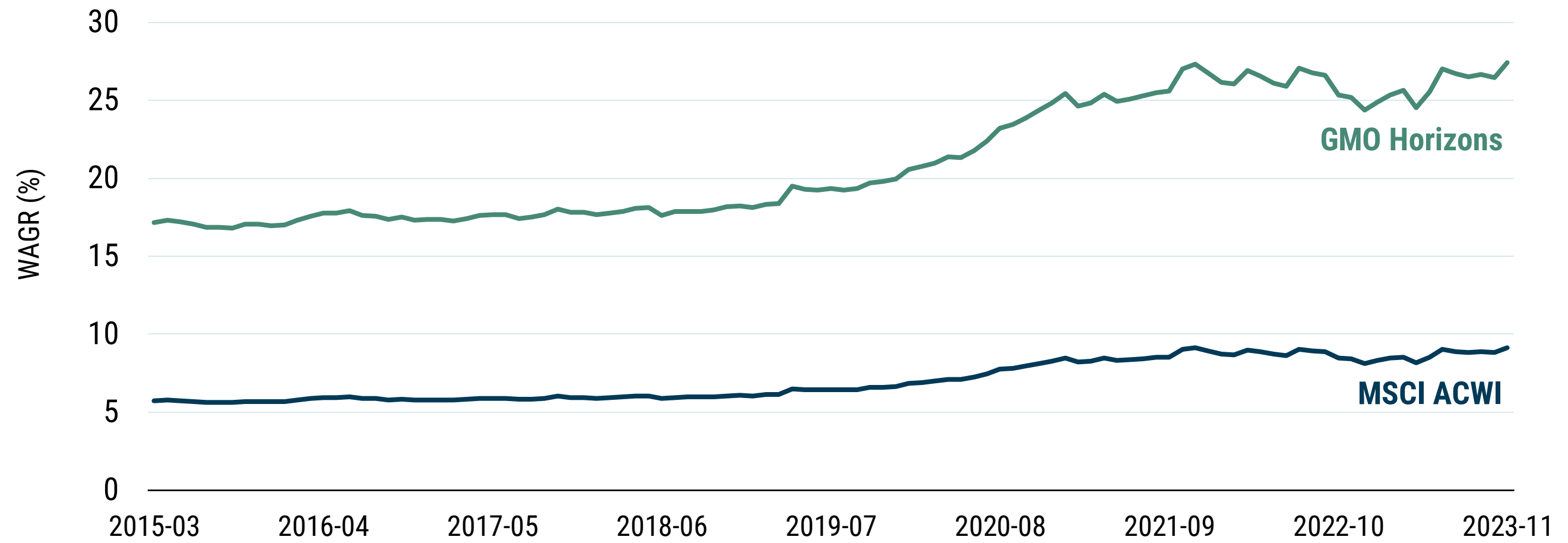
GMO Horizons reduces emissions intensity by 50%



Source: GMO, MSCI, Trucost
Portfolio emissions intensity is the portfolio-weighted average of each company's emissions intensity, measured in MT CO₂e / \$1 million market cap. Exposures are based on GMO's hypothetical backtest holdings. MSCI data may not be reproduced or used for any other purpose. MSCI provides no warranties, has not prepared or approved this report, and has no liability hereunder. Please visit <https://www.gmo.com/americas/benchmark-disclaimers/> to review the complete benchmark disclaimer notice.

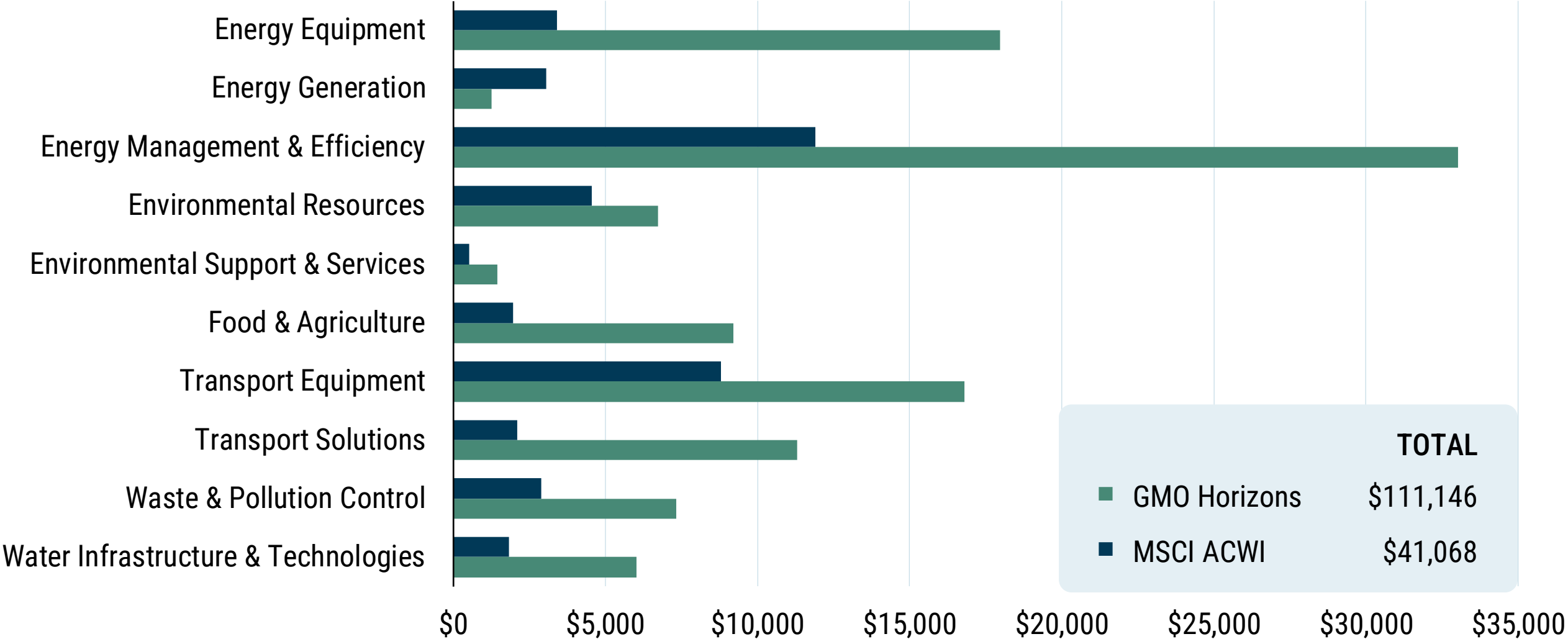
WEIGHTED AVERAGE GREEN REVENUE

GMO Horizons targets 3x green revenue



Source: GMO, MSCI, FTSE Russell
Portfolio weighted average green revenue exposures are based on GMO's hypothetical backtest holdings. MSCI data may not be reproduced or used for any other purpose. MSCI provides no warranties, has not prepared or approved this report, and has no liability hereunder. Please visit <https://www.gmo.com/americas/benchmark-disclaimers/> to review the complete benchmark disclaimer notice.

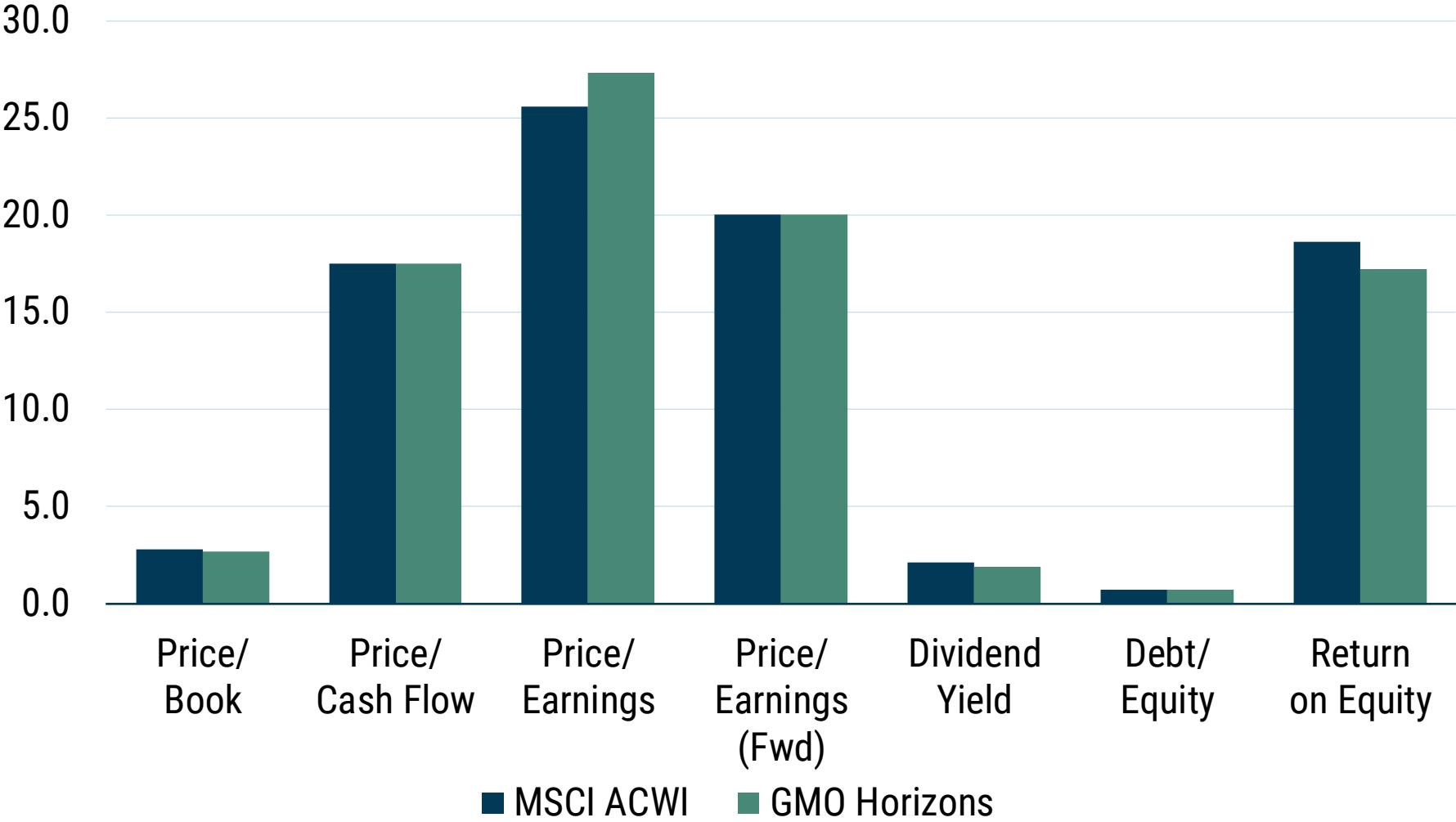
FINANCED GREEN REVENUE PER \$1 MILLION



Source: GMO, MSCI, FTSE Russell. Computed as of 30/11/23.
Green sectors are based on the FTSE Russell Green Revenue Classification System.
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BACKTEST RESULTS

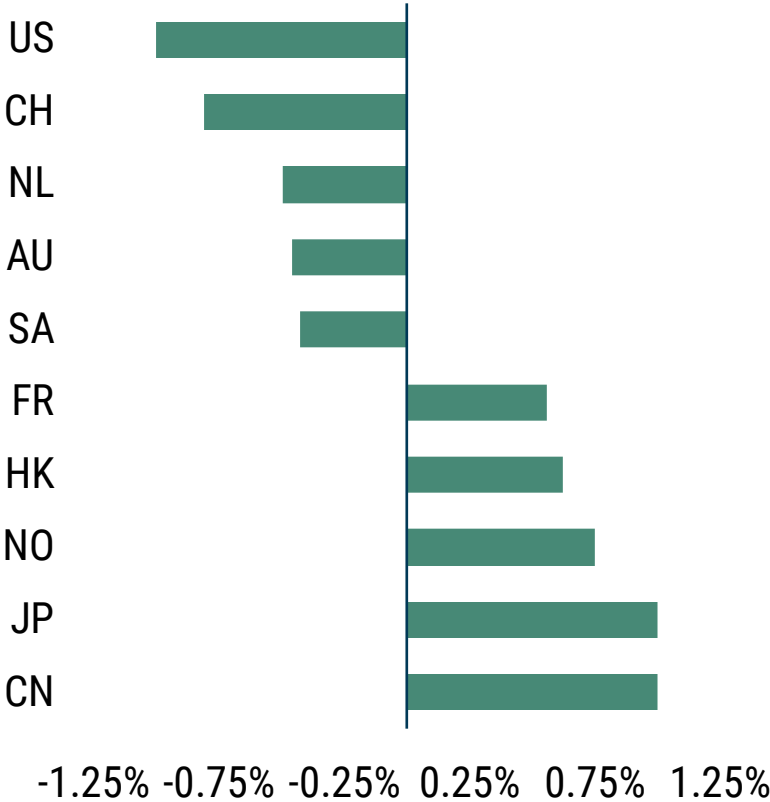
| | |
|---------------------------|------|
| Portfolio Return | 8.70 |
| Benchmark Return | 8.32 |
| Excess Return | 0.35 |
| Annualised Tracking Error | 1.29 |
| Information Ratio | 0.27 |
| Average Names | 300 |
| Active Share | 49.8 |



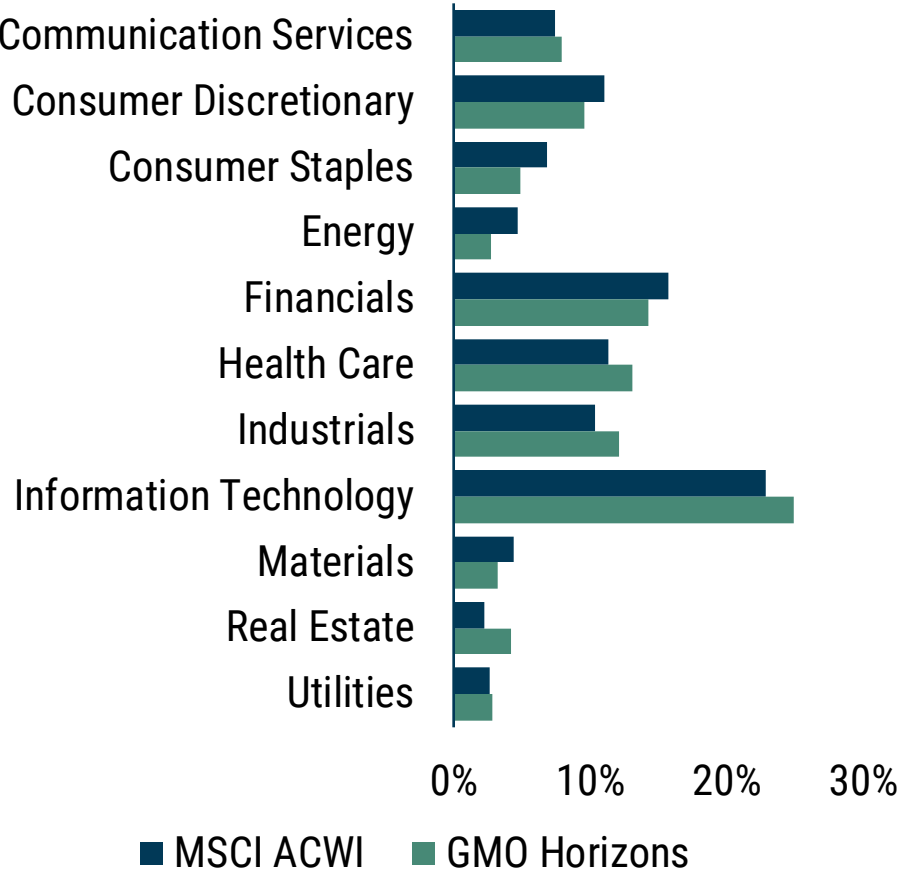
Source: GMO, MSCI
Backtest starts on 2015-03 with \$1B cash and ends on 2023-11. Portfolio returns are net of fees assuming a constant fee of 20 bps per year. Benchmark is MSCI ACWI. Statistics are annualized, except Names and Active Share, which are averages. Past performance, whether backtested or actual, is no guarantee of future results. Please see important disclosures at the end of this presentation. MSCI data may not be reproduced or used for any other purpose. MSCI provides no warranties, has not prepared or approved this report, and has no liability hereunder. Please visit <https://www.gmo.com/americas/benchmark-disclaimers/> to review the complete benchmark disclaimer notice.

BACKTEST RESULTS

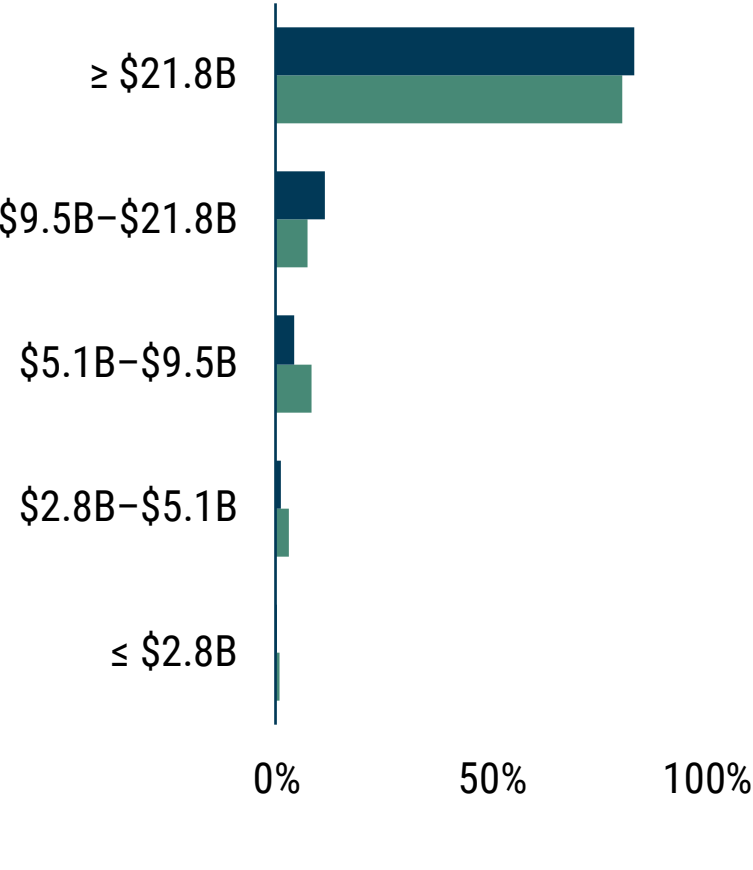
ACTIVE COUNTRY EXPOSURES



SECTOR EXPOSURES



MARKET CAP BREAKDOWN



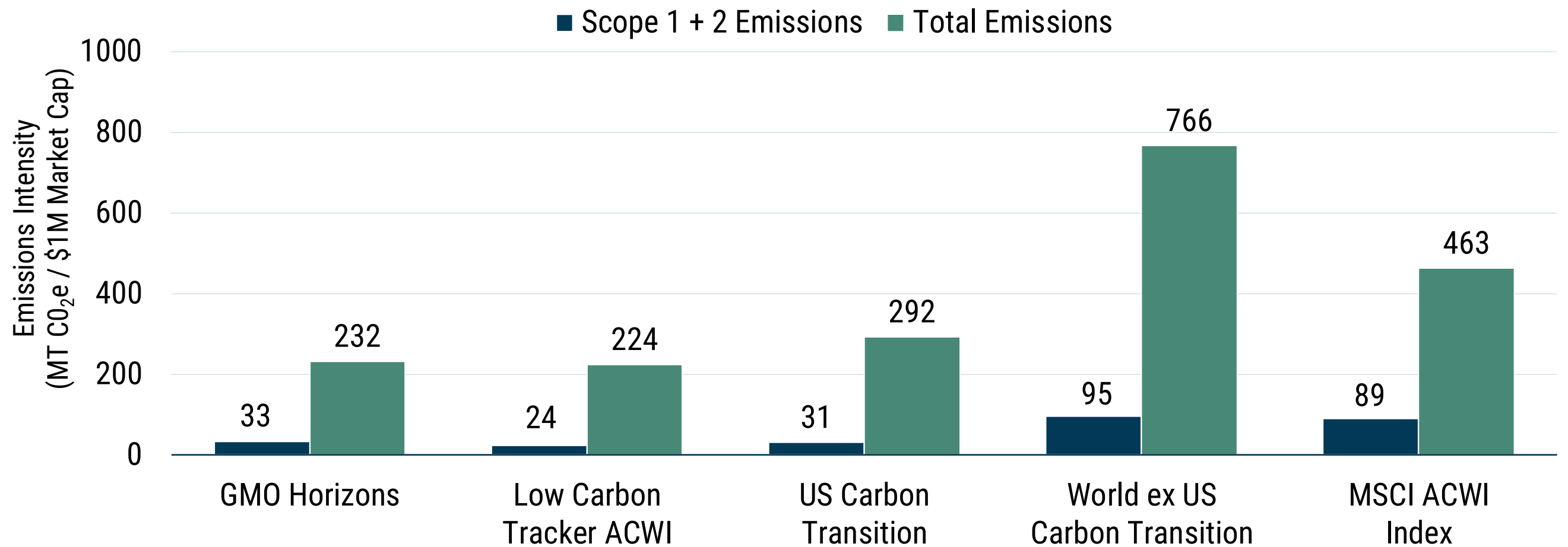
Characteristics are based on a backtested portfolio, as of 30/11/23 | Source: GMO, MSCI

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COMPARING EMISSIONS INTENSITIES

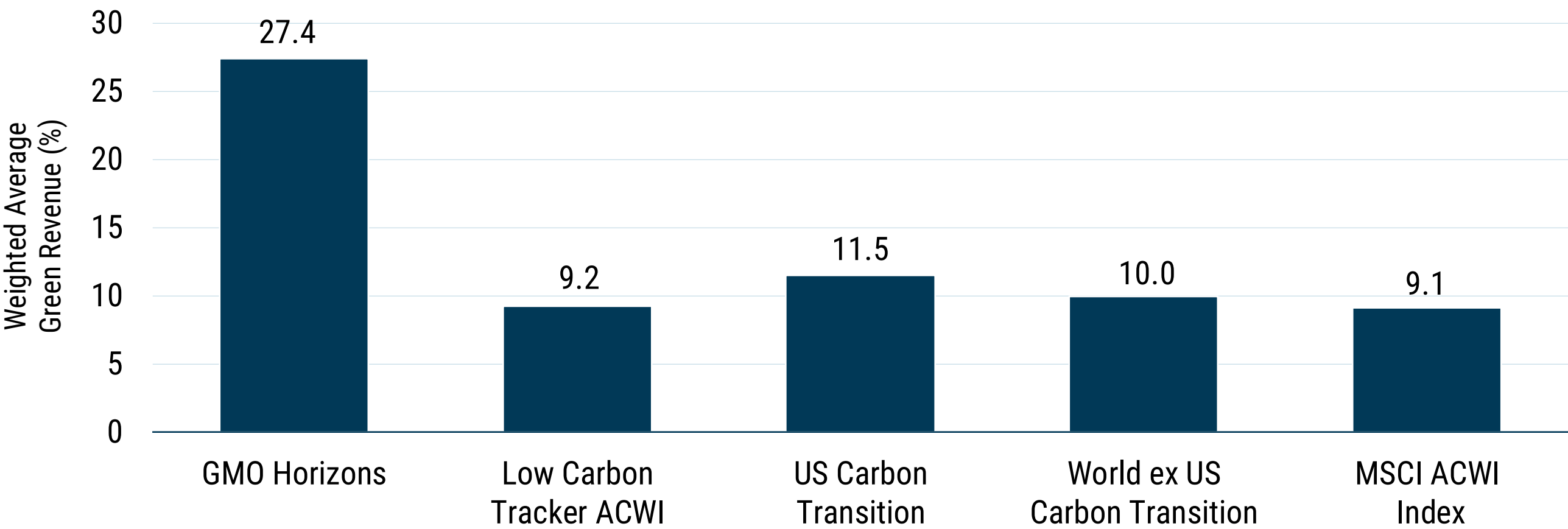
A more complete set of thematic exposures to sustainability



Source: GMO, MSCI, Trucost
Emissions intensities computed as of 30/11/23. Scope 1 and Scope 2 emissions data are derived from MSCI and Trucost. Total Emissions is Scope 1 and GMO Indirect Emissions combined. Portfolio emissions intensity is the portfolio-weighted average of each company's emissions intensity, measured in MT CO₂e / \$1 million market cap. Exposures are based on GMO's hypothetical backtest holdings. MSCI data may not be reproduced or used for any other purpose. MSCI provides no warranties, has not prepared or approved this report, and has no liability hereunder. Please visit <https://www.gmo.com/americas/benchmark-disclaimers/> to review the complete benchmark disclaimer notice.

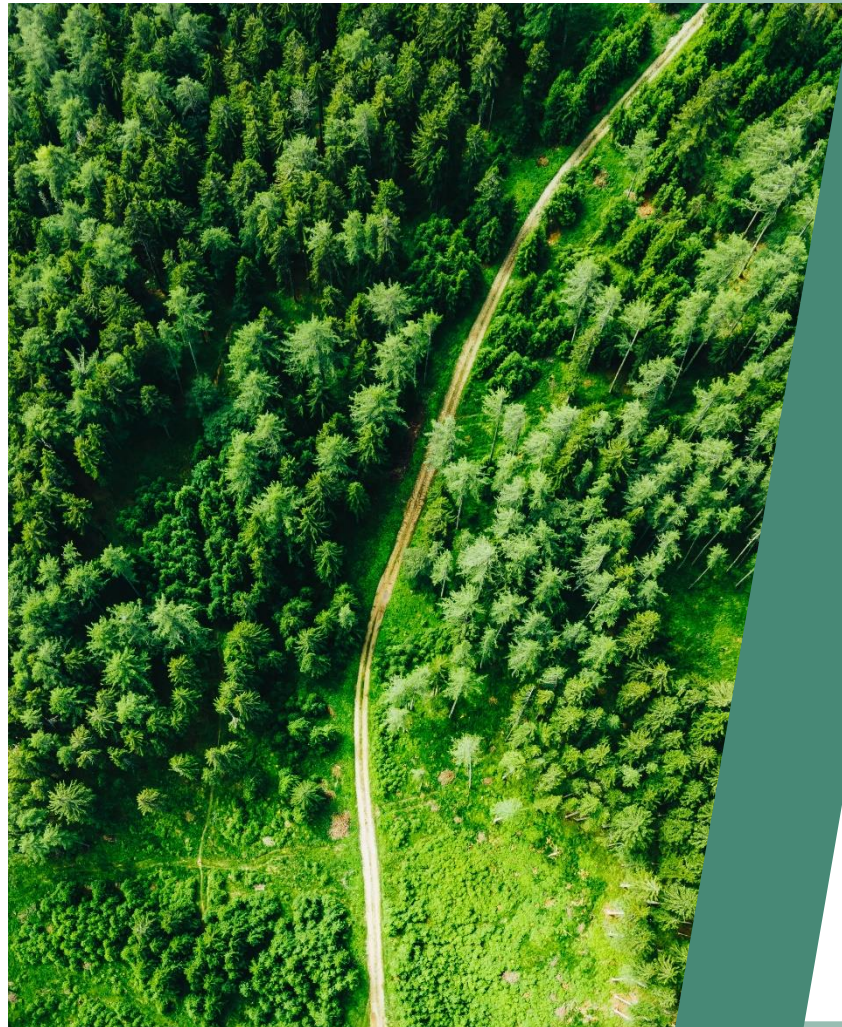
COMPARING WEIGHTED AVERAGE GREEN REVENUE

A more complete set of thematic exposures to sustainability



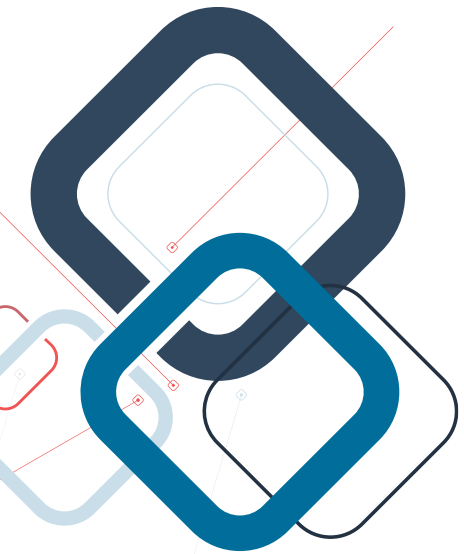
Source: GMO, MSCI, FTSE Russell
Portfolio-weighted average exposure to FTSE Russell Green Revenues, as of 30/11/23. Exposures are based on GMO's hypothetical backtest holdings. MSCI data may not be reproduced or used for any other purpose. MSCI provides no warranties, has not prepared or approved this report, and has no liability hereunder. Please visit <https://www.gmo.com/americas/benchmark-disclaimers/> to review the complete benchmark disclaimer notice.

SUMMARY



A core equity building block with a thematic approach that captures the long-term trend in sustainability

- **Climate opportunities:** Seeks firms with green revenues
- **Carbon efficient:** Considers total company emissions
- **ESG practice:** Applies GMO ESG Score and exclusions
- **Diversified:** Avoids country, sector, or style tilts



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IMPORTANT INFORMATION: GREEN REVENUE AND SUSTAINABLE INVESTING

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