

From Spot to Delta: Measuring Real-World Decarbonisation in Equity Portfolios

May 2026

Large institutional investors have a critical role to play in global decarbonisation. By directing capital toward companies that can reduce emissions most effectively, investors can support the transition to a lower-carbon economy without necessarily sacrificing long-term investment returns. Public equity markets finance more than \$100 trillion of corporate enterprise value, spanning both high-emitting sectors and the companies developing the technologies and infrastructure required for decarbonisation.

Within climate investing, two distinct philosophies have emerged. The first seeks to withdraw capital from high-emitting companies in order to raise their cost of capital, constrain growth, and discourage carbon-intensive business models. This approach is most compelling where there is limited credible pathway to decarbonisation, particularly in parts of the oil and gas sector.



Artemis II Crew snapshot of the “real world”

The second philosophy recognises that the largest emissions reductions will come from companies operating in emissions-intensive industries — in particular, utilities, industrials, transport, and materials — that are investing heavily in cleaner technologies, electrification, renewable energy, storage, and process innovation. These sectors account for the majority of global emissions and therefore offer the greatest opportunity for real-world decarbonisation. Investors following this approach seek to support companies with the strongest capacity and economic advantage in reducing emissions, on the basis that effective decarbonisers may also emerge as long-term financial outperformers.

These competing philosophies require different approaches to measurement. Investors focused on divestment typically assess success through reductions in portfolio carbon footprint, regardless of whether those reductions arise from selling high-emitting companies or from genuine operational decarbonisation by portfolio companies. By contrast, investors seeking to finance the transition should measure the actual emissions reductions achieved by the companies they own over time. The relevant question is not simply whether a portfolio appears lower carbon today, but whether invested capital is contributing to measurable real-world emissions decline.

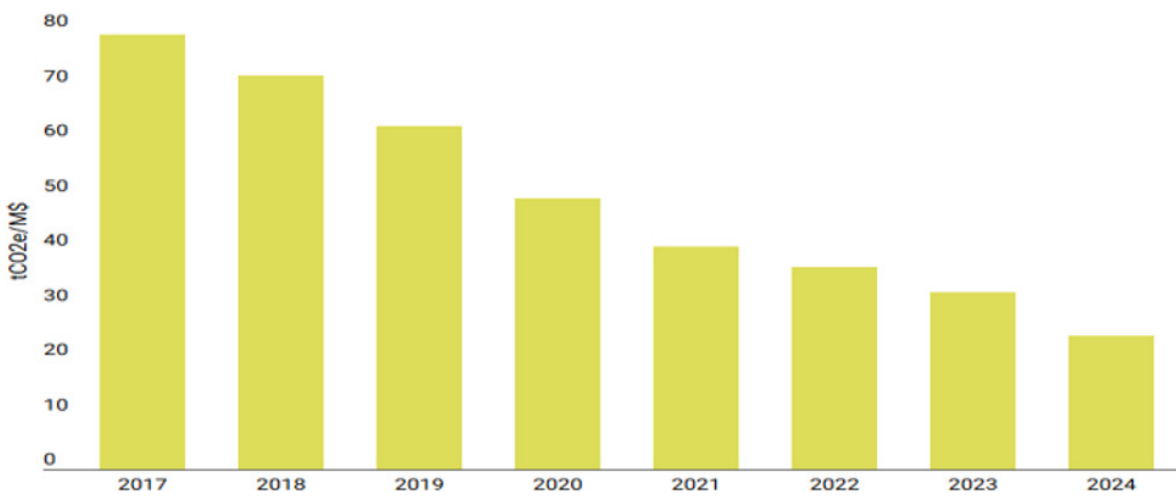
This paper frames the choice clearly: “Defund emitters” or “Fund decarbonisers.” In practice, many of the world’s largest emitters are also among its most important transition investors. While many oil and gas companies continue to struggle to achieve material emissions reductions, companies across utilities, industrials, transport, and materials are already driving large-scale deployment of renewables, batteries, electric vehicles, heat pumps, and low-carbon industrial processes.

True North Institute therefore proposes a shift in how institutional investors assess climate impact. Rather than relying primarily on static carbon footprint measures (“spot” emissions), investors should evaluate companies based on emissions reductions achieved over time (“delta” emissions). The paper argues that prevailing portfolio carbon metrics — widely promoted by industry initiatives such as the Net-Zero Asset Owner Alliance and Institutional Investors Group on Climate Change — can unintentionally incentivise divestment from precisely those companies making the largest investments in decarbonisation. A more effective framework would measure both historical and expected future emissions reductions, enabling investors to direct capital toward companies delivering meaningful real-world climate progress.

In its 2024 Sustainable Investing Report, Canadian Pension CDPQ (today known as “La Caisse”) highlights the extent to which it has removed high-emitting companies from its portfolio. Ironically, many of these companies will be among the most ambitious and committed to decarbonizing their operations. While it’s understandable to divest from oil and gas firms facing near-insurmountable transition challenges, excluding large emitters that are actively pursuing and financing their own decarbonization efforts is deeply counterproductive. These industrial, transportation and electric utility companies are collectively spending close to \$2 trillion a year on the energy transition. Divesting from them risks defunding some of the most essential contributors in global decarbonization.

Exhibit 1: CDPQ defunds the global energy transition by divesting from the largest decarbonising companies

The pace of the CDPQ portfolio’s carbon intensity can easily be achieved by divesting high emitting industrial, transportation and utility companies, potentially having a significant negative impact on the real environment



Source: CDPQ 2024 Sustainable Investing Report

Firms such as CDPQ and Ontario Teachers’ Pension Plan, along with others that have successfully met their portfolio carbon targets, are increasingly experiencing a sense of hollowness about these achievements. This is driven by the recognition that these milestones may have had little—if any—positive impact on real-world climate change and may even have contributed negatively. As a result, large capital owners like these are revising their strategies in the direction of backing “transitioning” companies just as GIC and NBIM have been doing over the last five years or more.

According to BNEF, \$2.3 trillion is invested in energy transition capex each year and rising. Nearly all of this is from public companies investing in wind, solar, batteries, EVs, heat pumps, etc. Our estimate is that \$8 trillion dollars of shareholder value has been created over the last 10 years by public companies making profitable investments in these sectors including companies like Iberdrola, NextEra, ENEL, Volkswagen, Hyundai, Tesla, BYD, CATL, and First Solar. Many of these companies are also the biggest emitters of GHGs still today as they continue investing in lower carbon products and processes.

True North has been working with Nordea Asset Management in Copenhagen over the past year to arrive at the right set of metrics for measuring portfolio impact on global GHG emissions. The table below is what we jointly presented to senior management of the Institutional Investors Group for Climate Change (IIGCC) as our recommended set of metrics. The most important metrics are defined in the first column and the last column. The first is the historical actual decarbonisation of a company (“issuer”) and the last column is the expected future decarbonisation. The average of these measures of change for each company held in your portfolio during the year, weighted by each company’s position size in the portfolio, arrives at the best measures of backward- and forward-looking decarbonisation. Position size can be adjusted to reflect part year holdings – i.e., a 4% year-end holding that only came in on 1 July, is weighted as 2%.

Exhibit 2: Nordea/True North Institute Proposed Company Level Emissions Metrics

ISSUER-LEVEL DATA					
Past	Current	Future			
Realized decarbonization	Current carbon footprint	Expected future carbon footprint	Expected cumulative carbon	Expected decarbonization	Expected cumulative decarbonization
$\frac{CO_2e}{EVIC}_{t=0} - \frac{CO_2e}{EVIC}_{t=n}$	$(CO_2e/EVIC)_{t=0}$	$(CO_2e/EVIC)_{t+n}$	$\int_{t=0}^{t+n} \Omega_t (CO_2e/EVIC)_t dt$ $\Omega = \text{time value of carbon}$	$\frac{CO_2e}{EVIC}_{t+n} - \frac{CO_2e}{EVIC}_{t=0}$	$\int_{t=0}^{t+n} \Omega_t \left[(CO_2e/EVIC)_t - (CO_2e/EVIC)_{t=0} \right] dt$
Note: All metrics are expressed with a sector-agnostic denominator (EVIC) in this example, but can be expressed as absolute or sector-specific intensity (e.g., CO ₂ e/kWh) where possible					
<i>...has reduced emissions.</i>	<i>...is low-emitting.</i>	<i>...is a future low-emitter.</i>	<i>...has low expected cumulative emissions.</i>	<i>...will reduce emissions.</i>	<i>...will reduce emissions, early.</i>

The metrics defined in columns 2 – 5 are quite simply the building blocks to arrive at the past and future decarbonisation measures in columns 1 and 6.

We provide an example of the calculation of past and future change in carbon intensity for a single company, CRH cement.

Exhibit 3: Carbon Intensity Change Calculation – CRH Example

Company	Market Cap \$M	2024 Scope 1 & 2 emissions (Mt)	Carbon Intensity 2024 (Tonnes of CO2/\$M Mkt Cap)	2035 Scope 1&2 emissions (Mt)	Forecast Carbon Intensity in 2035 assuming no change in mkt cap	2024 to 2035 Expected Intensity Delta
Formula	A	B	B/A	C	C/A	B/A - C/A
CRH	80,000	33	413	18	225	188

We recommend you report two separate figures on the total portfolio for the past and the future: Scope 1 and 2 only and then on Scope 1, 2 and 3, recognising the fact that some changes in Scope 3 are due to methodological changes (which are happening less and less each year, leading to more reliable actual Scope 3 emissions reductions).

Using this methodology and applying it to the 1311 companies in the MSCI who report management’s targets for future decarbonisation, shows that the average MSCI company has a Scope 1 to 3 carbon intensity of 454 tonnes per \$M of market value. The average target for 2040 is a 37% reduction to 285 tonnes per \$M of market value. The vast majority of this carbon reduction is concentrated with approximately 300 of these 1311 companies. These are the leading decarbonisers. They of course start with much higher carbon intensity today of approximately 734 tonnes/\$M of market cap and are targeting nearly a 70% reduction by 2040 to 224 tonnes/\$M of market cap.

Exhibit 4: Institutional investors can report emissions intensity changes by showing past reductions achieved by portfolio companies during ownership and future reductions based on company targets, as illustrated for our Decarb Leaders portfolio

Scope 1, 2 and 3 Decarbonisation							
Portfolio	Total Scope 1-3 2024/5 actual (Mt CO2e)	Total Scope 1-3 2040 forecast (Mt CO2e)	Total CO2e reduction by 2040	Carbon Intensity 2025 (tCO2e per \$M Mkt Cap)	Forecast Intensity 2040 (tCO2e per \$M Mkt Cap)	Decrease (delta) in Intensity 2024 to 2040	Forecast Intensity Reduction % (2024 to 2040)
TNI Decarb Leaders (n = 312)	18,423	5,633	12,790	734	224	509	69%
MSCI World (n = 1311)	43,364	27,250	16,114	454	285	169	37%

Sources:

TNI Decarb Leaders portfolio 313 listed equities selected from a top-500 global emitters universe, excluding mainland-China-only listings and companies with zero or negative projected emissions reductions. Baseline Scope 1-3 emissions anchored on 2025 actuals. Scope 1+2 split pulled separately via Bloomberg.

MSCI World index constituents c.1,400 listed equities, developed markets (NOT ACWI). Baseline emissions use 2024 actuals (most recent year with broad reporting coverage); 2040 emissions are company-level forecasts.

Scope 1, 2 and 3 emissions Bloomberg ESG. Actuals from Sustainalytics (primary) with MSCI ESG for gaps; 2040 figures from Bloomberg's company-level emissions forecast model.

Market capitalisation Bloomberg, USD, latest available date.

This more powerfully illustrates the importance of the leading decarbonisers relative to the average company in decarbonising the planet. The difference is striking which highlights both how concentrated emissions are within certain sectors and the degree to which companies in these sectors intend to decarbonise.

The IIGCC is currently reviewing their guidance to include this as an additional reporting metric but will retain recommendations for using metrics which encourage investors to stop backing the companies who are having, by far, the greatest impact on global decarbonisation.

True North Institute remains determined to see trillions of dollars of investor capital flowing into these companies. To that end, in March of 2025, we launched a portfolio called **Decarbonisation Leaders**, which today owns 70 companies across industrials, utilities, transportation and materials sectors who are expected to contribute most to future decarbonisation and who have the management and financial resources to do so, based on our analysis. These companies also overlap with the companies who are doing the most to meet the growing power demands from AI/data centres, electric vehicles and industrial electrification.

Our **Decarbonisation Leaders** portfolio is not available today to outside investors. Instead, we post the names of the companies we own in this portfolio [here](#) on the TNI website. We would encourage any and all investors to support these companies by owning and overweighting such companies in your portfolios. We are confident that these companies will at least match market performance over the long term but may outperform to the extent they are mitigating against the cost of carbon abatement before that becomes a more meaningful headwind to their competitors who are lagging behind on decarbonisation.

We are seeing a move by institutional investors (pensions, sovereign wealth funds, endowments and foundations) away from striving to decarbonise their portfolios, but rather toward seeing that their large amounts of capital are supporting the biggest decarbonisers. Both GIC (Government of Singapore) and NBIM (Norwegian Oil Fund) explicitly commit to owning “transitioning” companies in their respective sustainable investment policies. The UK Transition Finance Council has published a draft policy document, Credible Transition Finance Guidelines, which sets out minimum, evidence-based criteria for assessing whether companies and financing activities demonstrate credible transition ambition, near-term plans, and delivery. The guidelines signal a clear shift to forward-looking progress and implementation, rather than relying solely on static emissions metrics—an approach aligned with a “delta, not spot” perspective.

Conclusion

One goal of this paper is to encourage those organisations who institutional investors look to for guidance on decarbonisation reporting, including the NZAOA and IIGCC, to urgently reconsider its messaging which is effectively defunding decarbonisation. In its current form, their advice may be doing more harm than good—and arguably undermining the very decarbonisation it seeks to support.

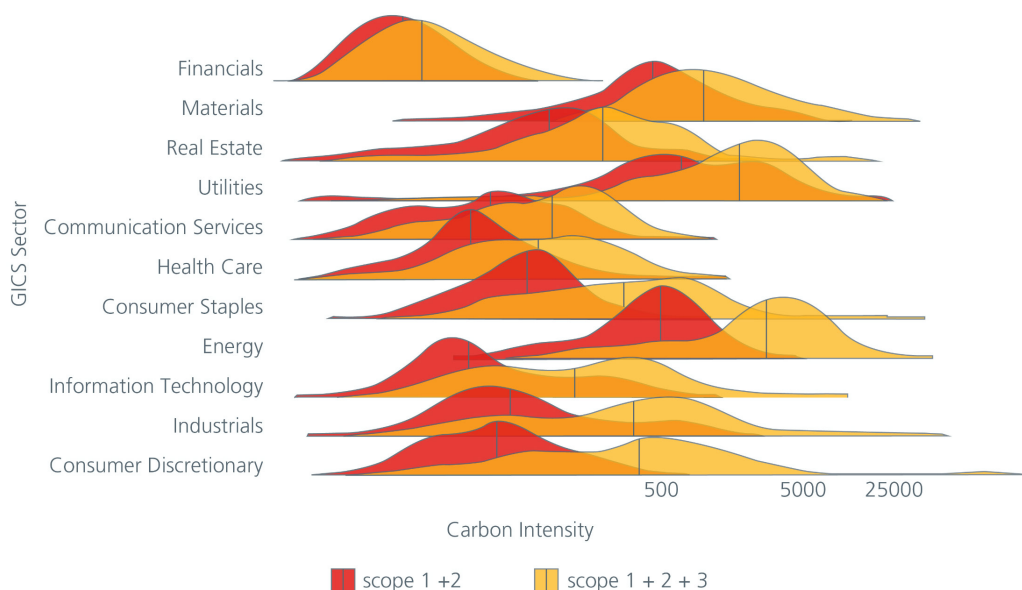
At a time when global momentum for the energy transition is already under threat—from forces like US President Donald Trump’s administration—we can ill afford for initiatives like the NZAOA to unintentionally align with that reversal.

Appendix

2024 MSCI “Spot” CO2e Intensity Metrics by Industry Sector

Sector	Mkt cap-weighted Scope 1+2 per \$M Market Cap	Mkt cap-weighted Scope 1+2+3 per \$M Market Cap
Energy	200	2,125
Automobiles & Components	24	2,000
Capital Goods	16	1,568
Materials	230	1,284
Utilities	393	1,050
Consumer Staples Distribution & Retail	26	807
Transportation	213	474
Household & Personal Products	15	457
Banks	1	406
Food, Beverage & Tobacco	30	370
Consumer Services	31	204
Consumer Durables & Apparel	6	199
Financial Services	1	154
Insurance	1	138
Real Estate Management & Development	15	137
Consumer Discretionary Distribution & Retail	10	130
Health Care Equipment & Services	5	106
Commercial & Professional Services	44	94
Telecommunication Services	19	86
Technology Hardware & Equipment	3	40
Equity Real Estate Investment Trusts (REITs)	9	36
Pharmaceuticals, Biotechnology & Life Sciences	3	24
Semiconductors & Semiconductor Equipment	2	15
Media & Entertainment	3	12
Software & Services	2	11
Total MSCI World	37	454

Carbon Intensity ranges by GICS Sector (log scale)



Source: MSCI, Eastspring Investments, data as of end-Dec 2021

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