

In Focus: The Spurious Accuracy of Carbon Intensity

Managing climate risk at the portfolio level means being prepared to look beyond established conventions. Carbon intensity, defined as emissions relative to revenue, has long served as a primary measure of climate risk, and for good reason: In an investment industry built on quantifiable metrics, it offers an accessible, standardised benchmark. However, when used in isolation, it can present an incomplete picture.

In practice, relying solely on carbon intensity to assess climate risk is a methodological limitation, much as relying on a single valuation multiple to drive investment decisions would be. Used alone, carbon intensity can obscure material investment risks and, importantly, opportunities behind an appearance of precision. We have long taken a dashboard approach which incorporates forward-looking alignment metrics (such as our Net Zero Alignment Framework), which in turn informs our stewardship and engagement activities.

The Myth of the ‘Hockey Stick’ Curve

The global decarbonisation journey has entered a new phase. The early gains on the marginal abatement curve, operational efficiencies, fuel switching, and low-hanging renewables procurement, have largely been captured. What remains is structurally harder. We are now in the difficult phase of the transition, where meaningful progress is fundamentally non-linear and can seem at times counterintuitive.

Carbon intensity models tend to assume a smooth, steady decline over time. In practice, industrial decarbonisation follows no such trajectory. For example, true transition may require substantial upfront capital expenditure, and companies investing in breakthrough abatement technology might even see carbon intensity rise temporarily as operations are retooled, before any structural reduction materialises. Evaluating companies on a single-intensity metric risks penalising precisely the behaviour we want to encourage: deploying capital today to address long-term climate liabilities.

What can be true at an individual company level can be even more so at an industry or systems level. Many of the companies best positioned to enable the transition to a low-carbon future are themselves higher emitting, precisely because they are building and powering the technologies that drive carbon reduction and efficiency gains downstream across the value chain.

Multi-Year Data Blindspot

There is a more fundamental issue: carbon intensity, as it exists in the market today, does not reflect what investors often assume it does. Due to the inherent lag in corporate sustainability reporting and data aggregation, the figures available at any given point are typically based on emissions data from two to three years prior and so may not align with reported turnover for a particular period.

CARBON ACCOUNTING PRIMER

Carbon accounting is the systematic process of measuring, recording, and reporting carbon emissions attributable to an organisation’s activities. Often using the Greenhouse Gas Protocol, it delivers a quantifiable statement on climate impact, but as we highlight in this article, not always the full picture.

[Carbon Accounting 101](#)

Imagine a lightbulb manufacturer...

Scope 1 Emissions

Emissions from sources the company owns or directly controls:

- Furnaces & kilns
- On-site generators
- Company-owned vehicles
- Fugitive emissions

Scope 2 Emissions

Indirect emissions from purchased energy:

- Electricity
- Purchased steam (for glass-forming)

Scope 3 Emissions

Emissions upstream and downstream across the full value chain:

- Mining raw materials
- Electricity consumed by end-user operating the lightbulb

Avoided Emissions (claim)

‘Scope 4’:

- Emissions not released by switching to LED bulbs

What appears to be a current risk signal is, in reality, a historical snapshot. This is compounded by the realities of prevailing methodological frameworks: MSCI carbon intensity data, for instance, is abstracted from underlying operational data in cases where companies do not disclose directly, or where complex business models, such as franchises, make straightforward measurement difficult. Treating these metrics as standalone risk tools leaves portfolios structurally blind to actual transition dynamics on the ground.

This disconnect matters, especially in a concentrated portfolio. A utility that has since retired its last coal-fired asset will still register as a high emitter on today's data. Conversely, a company that has materially increased its emissions profile over the past year will not yet show up as higher risk in the current reported figures. The metric, in other words, may offer neither a reliable picture of where a company stands today nor any indication of where it is heading. Relying on it as the single decision-making input is to navigate the portfolio using outdated coordinates.

Systemic Transition Enablers

Perhaps the most consequential limitation of carbon intensity as a de facto portfolio constraint is that it systematically reduces exposure to the

companies most central to solving the climate crisis. Consider industrial enablers: the developers of oxygen enrichment technologies designed to lower blast furnace emissions, or the engineers building hydrogen-compatible gas turbines. These businesses are, by their nature, carbon-intensive today. Restricting portfolio allocation on the basis of that intensity alone means directing capital away from these critical transition enablers and, by extension, away from the structural growth opportunity the transition represents. In its place, capital flows towards low-emitting sectors that, while optically clean, do not actively contribute to decarbonising the real economy. As the transition accelerates and adjacent themes such as energy security grow in strategic importance, we believe this structural underweight to enabling industries presents a material constraint on long-term return generation.

The Dashboard Approach

So, if carbon intensity alone is insufficient, what does a more complete framework look like? Our proprietary dashboard evaluates portfolio holdings across multiple dimensions, contextualising carbon intensity as one input among several, rather than a singular measure of climate risk. A selection of these dimensions is outlined below.

Dashboard Dimension	Core Focus	Our Investment Insight
Current Footprint	Carbon Intensity	Establishes the historical baseline and forms the foundation of our alignment assessment.
Forward Commitment	Climate Targets & SBTi Alignment	Validates the credibility, integrity, and ambition of management's decarbonisation goals.
Systemic Value	Enablers Overview	Identifies firms providing climate solutions across the value chain.

By layering these dimensions, we move from a static, backward-looking snapshot to a dynamic assessment that captures where a company sits today, the credibility of where it intends to go, and whether it is actively contributing to the broader transition. No single metric can answer all three questions simultaneously.

This framework creates space for the full spectrum of transition actors within the portfolio: companies with inherently low carbon profiles and correspondingly lower transition risk, alongside those building the infrastructure, manufacturing the technologies, and supplying the energy systems the world requires to decarbonise at scale. Rather than filtering out complexity, the dashboard embraces it, and in doing so, positions the portfolio to capture transition opportunity while still managing risk.

The Dashboard in Practice: Siemens Energy

This framework also informs our engagement strategy, as highlighted by the Siemens Energy engagement overview below.

As a gas turbine manufacturer, Siemens Energy plays a key part in the provision of electrical energy to a range of industries. The Scope 1 & 2 carbon intensity assessment of Siemens Energy is quite low, helped by its energy-efficient production process. Most of the carbon impact of the business, therefore, is indirect and arises from the operation of the turbines themselves; the Scope 3 emissions. Traditional carbon intensity ratios do not capture this.

Our engagement with the management team at Siemens Energy has consequently been tailored to focus on the areas where the company's climate contribution is most relevant:

1. **Hydrogen-ready gas turbines:** Commercial deployment of turbines capable of running on hydrogen blends today, with a pathway to full hydrogen combustion as production hubs scale. This provides heavy-industry clients with a fuel-switching route without requiring full asset replacement.
2. **Large-scale electrical grid infrastructure:** Technologies enabling the grid expansion and modernisation needed to support accelerating electrification. Without this enabling layer, downstream decarbonisation across transport, heating, and industry remains constrained.

Together, these operate at the infrastructure level of the energy system rather than representing incremental efficiency improvements.

More broadly, Siemens Energy is undergoing a strategic shift in which sustainability is embedded across its operating model. The company's refreshed DEGREE framework (decarbonisation, ethics, governance, resource efficiency, equity, and employability) sets more ambitious 2030 targets with a greater focus on operational execution and measurable customer impact, combining automation, Industrial AI, and digital twin capabilities to deliver emissions reductions and efficiency gains across its client base.

Ultimately, we believe a single metric cannot capture the complexity of a global energy transition or climate risk. Our dashboard approach is designed to ensure that our portfolio reflects that reality, and that capital flows towards the companies best placed to navigate it.