



# The Value of Footprints

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Walden believes climate change is the world's foremost environmental challenge. Failure to address it will lead to devastating consequences, both forecast and unforeseen. For that reason, various stakeholders are seeking to learn more about the carbon-related risks borne by investment portfolios. Portfolio carbon "footprinting" has emerged as an important tool to help investors measure those risks. Walden is pleased to report the results of our third carbon footprint analysis of a representative client large cap portfolio. We are now grappling with its utility and relevance.

As Walden builds portfolios for clients, we strive to identify companies that are well positioned to manage investment risks associated with climate change, in addition to numerous other environmental, social, and governance (ESG) risks and opportunities. We believe building appropriately diversified portfolios with lower-risk companies that have higher financial quality will deliver competitive, risk-adjusted returns over the long term.

## What is a Portfolio Carbon Footprint?

In basic terms, a portfolio carbon footprint measures carbon emissions and intensity associated with operations of all the companies in a portfolio relative to a given benchmark such as the S&P 500. ESG data vendor MSCI, for example, defines a portfolio carbon footprint as total carbon emissions of a portfolio per \$million invested.

Portfolio footprints have gained attention in the last year. In large part, the increased attention is the result of asset owners and managers signing the Montreal Pledge, which commits signatories to footprinting their portfolios. The Montreal Pledge, as well as the Portfolio Decarbonization Coalition, which supports taking steps to decarbonize investment portfolios and disclosing carbon risks, was launched to demonstrate that the investor community is addressing climate change. This chorus of investor voices has been orchestrated to crescendo at the December meeting of the United Nations Climate Change Conference in Paris (COP21). To further amplify the message, the French parliament passed a law in May (2015) obliging French institutional investors to disclose the carbon risks of their portfolios.<sup>1</sup>

## Why Measure a Portfolio's Footprint?

Before diving into the results of Walden's carbon footprint, it is worth taking a step back to ask a simple question: Why measure the carbon footprint of a portfolio? There are a number of possible motivations for doing so, and the answer depends on whom you ask. An asset owner or manager might have one set of motivations for carrying out the exercise, while other stakeholders, including governments, financial market regulators, and environmental advocates might have others. From our perspective, there are three primary objectives.

- **Investment risk management:** A carbon footprint can help identify exposure to financial risk associated with changes in the way carbon (or greenhouse gas emissions, more broadly) is regulated. This can inform engagement with companies that appear more at risk, or potentially lead to reconsidering the company's place in a client portfolio.
- **Transparency:** Publishing a portfolio's footprint may provide a mechanism to communicate to other stakeholders how an investor is managing carbon risk and contributing to solutions (or the problem, as the case may be) to climate change.
- **Signaling:** The International Energy Agency estimates that investments in low-carbon technology need to reach \$500 billion per annum by 2020 and one trillion dollars a year by 2030 in order to achieve the goal of limiting global warming to 2 degrees C above pre-industrial levels.<sup>2</sup> A robust and transparent policy framework is necessary to provide investors with the certainty to allocate that capital. Portfolio footprints can send a message to policy makers and companies alike that investors recognize the risks and opportunities associated with climate change.

## Walden's Results

In 2014, we asked two leaders in carbon footprint analysis, Trucost and South Pole Carbon, to evaluate a representative Walden core equity portfolio (as of August 31, 2014). Recently we repeated the footprint on the same portfolio, but used MSCI in the place of South Pole Carbon. This decision was simply based on a desire to have the opportunity to see how the results of another provider would compare to those we had previously utilized.

Additionally, we expanded our analysis to include a representative fossil fuel free (FFF) core equity portfolio. Investment managers have taken a variety of approaches toward divestment. Some managers exclude coal stocks only. Others exclude all companies with fossil fuel reserves. While still others exclude the entire energy sector. Walden chose the later approach for the portfolio analyzed. We discuss below the result of the footprint of the core equity portfolio, which we refer to as unconstrained relative to the FFF portfolio, followed by analysis of the FFF footprint.

### Walden Core Equity Portfolio Footprint

There are two primary observations to make regarding the footprint. First, our performance relative to the benchmark continues to be positive. The footprint of the representative Walden portfolio was more than twice as carbon efficient as the benchmark. Second, the most significant change from a carbon perspective to the portfolio during the year was the addition of two electric utilities, Consolidated Edison (ED) and Eversource (ES). While we chose to invest in one of the most challenging industries from a carbon perspective, our footprint actually improved because of investment decisions that included picking some of the best among the sector. The chart below shows that the carbon intensity of both ED and ES are significantly lower than other electric utilities included in the benchmark.

According to the Trucost analysis (see Portfolio Carbon Footprints Results, above) the portfolio footprint improved from 51 percent less carbon intensive to 57 percent less carbon intensive than the benchmark in the one-year period ending August 31, 2015. The new utility allocation changed the attribution analysis. In the first year the positive footprint result was almost exclusively explained by sector allocation (i.e., 46 of the 51 percent due to no utility exposure); in the more recent period the benefit was more evenly split between sector allocation and stock selection. The favorable stock selection is almost entirely due to picking utilities with relatively low carbon exposure (accounting for 26 of the 32 percent benefit coming from stock selection in 2015). In other words, while we began investing in a carbon intensive sector, we picked relatively low carbon stocks in that sector and maintained (actually improved) our overall portfolio footprint relative to its benchmark.

Footprint Results	MSCI 2015	Trucost Fossil Fuel Free 2015	Trucost 2015	Trucost 2014
<b>Total Footprint (tCO<sub>2</sub>e/\$mn)</b>				
Walden portfolio	80	131	131	147
Benchmark	208	303**	301	301
<b>Carbon intensity relative to benchmark</b>	<b>62%</b>	<b>57%</b>	<b>57%</b>	<b>51%</b>
Attribution: Sector allocation	15%*	44%	24%	46%
Attribution: Stock selection	58%*	13%	32%	5%
#1 contributing stock/%	PX/18%	APD/21%	COP/12%	PX/10%
#2 contributing stock/%	COP/12%	PX/12%	PX/9%	APA/8%
#3 contributing stock/%	UNP/10%	UNP/5%	GIS/4%	COP/6%

\*12% offset due to interaction. Interaction measures the combined impact of a manager's allocation and stock selection within a sector.

\*\*Slight change in benchmark carbon intensity

Portfolio changes have altered the top contributors to the portfolio carbon footprint in 2015 relative to 2014. **Praxair** (PX) has moved from #1 to #2 (though its relative contribution is close to the same and its portfolio position declined from 1.4 percent to just under 1 percent) while **ConocoPhillips** (COP) nearly doubled from 6.3 percent to 11.5 percent (even though its portfolio weighting went from 2.3 percent to just under 2 percent). **Apache** (APA) is no longer in the top 10 contributors (went from a 1.7 percent position to just under 0.5 percent). Trucost did not show a change in overall carbon emissions of the benchmark (S&P 500).

The MSCI analysis also calculates a low carbon exposure relative to the benchmark for the Walden portfolio (the advantage in this analysis is somewhat greater.) MSCI shows carbon intensity of the representative portfolio to be 62 percent lower than the benchmark. Most of the positive contribution comes from stock selection in the utility sector. MSCI also compares the portfolio to its U.S. ESG index (MSCI USA ESG) and the result is similar: 58 percent better. That is because, surprisingly, MSCI USA ESG is only marginally (8 percent) more carbon efficient than the S&P 500. Largest individual contributors are similar in name but not quantity. For example, MSCI estimates that PX has more than double the portfolio carbon contribution at 18 percent when compared to the Trucost assessment. Seven of the top 10 contributors appear on both lists.

### Walden Fossil Fuel Free (FFF) Core Equity Footprint

Overall, the unconstrained portfolio holds 73 companies, while the FFF portfolio holds 63. Forty-nine companies are included in both portfolios. At the sector level, weights vary moderately

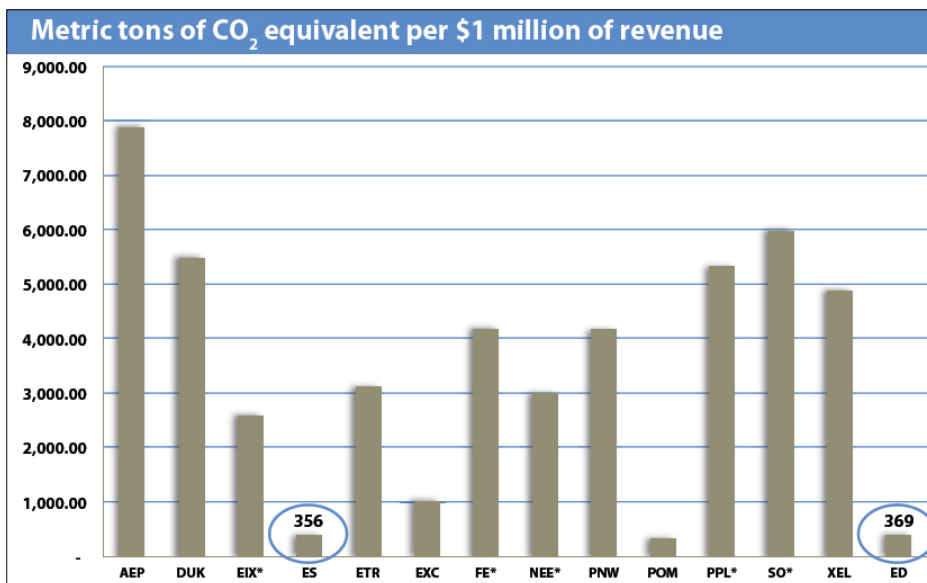
between the two portfolios (with the obvious exception of the energy sector, which is completely excluded). The FFF portfolio was 57 percent less carbon intensive than the S&P 500, nearly identical to the unconstrained Walden core equity portfolio.

While the headline carbon efficiency is equivalent, there are a number of differences underlying this result which reflect decisions made in the construction of the FFF portfolio. Forty-four percent of the carbon efficiency of the FFF portfolio relative to the benchmark is attributable to sector allocation, whereas in the unconstrained portfolio sector allocation accounts for 24 percent of carbon efficiency. Slightly lower exposure to the utilities industry in the FFF portfolio accounted for the biggest favorable change (+20% compared to +10%). At a stock level, the most significant difference on the FFF portfolio's carbon efficiency resulted from the inclusion of **Air Products & Chemicals (APD)**, which decreased the carbon efficiency of the portfolio by 8 percent.

The exclusion of the energy sector had twice the positive impact on portfolio carbon efficiency relative to the combined effect of underweighting the sector and choosing relatively carbon efficient energy companies in the unconstrained portfolio. Still, in both portfolios the energy sector attribution was a relatively small component of the overall carbon efficiency.

Given the carbon impact of APD, we note the investment rationale for the company. APD, like Praxair, sells atmospheric gases that are used directly in refining and other petrochemical processes and is also the world's leading supplier of LNG process technology and equipment. The company's success is positively correlated with the price of oil and to the energy sector, thus performing a similar role in a portfolio as fossil fuel companies. Additionally, as is the case with most oil companies, APD generally benefits from rising global economic activity.

On the surface, the results suggest that the FFF portfolio is no better from a carbon perspective than the similar low-carbon portfolio without such constraints. However, APD has a beneficial impact on carbon emissions overall, especially relative to the fossil fuel industry, which are not captured in the footprinting methodology (discussed in the following section using Praxair as an example). On the flip side, fossil fuel exposure in the unconstrained portfolio is certainly more negative than the footprint suggests because product impact



Sources: CDP 2015 data for companies without asterisks; NEE is sourced from Thomson Reuters and all remaining asterisked company data are from corporate websites.

is not captured in the current metric. Therefore, true carbon exposure in Walden's FFF portfolio is likely better than the headline result indicates.

### What Should an Investor Do with the Results?

We advise a cautious approach in interpreting and acting upon the results of a portfolio footprint. As we have written in the past, and as other investors have noted, there are a number of challenges associated with the tool and the underlying data. These include:

- In many cases, the emissions associated with the materials used to make a product, or the use and disposal of a product at the end of its useful life (referred to as Scope 3 emissions) represent much larger contributions of a company's carbon footprint than the emissions currently captured in most footprint methodologies. For example, Ford Motor Company reports 4.8 million tons of emissions from its facilities and five times that amount (25 million tons) associated with the use of the vehicles it sold in 2012. Under most methodologies, only the five million tons of emissions would be captured in the carbon footprint of investing in Ford. This means that the climate impact of automotive manufacturers, oil and gas companies, and numerous other companies is significantly understated. And the obverse is true as well: Most methodologies do not currently capture benefits associated with products. In our 2014 analysis, we discussed the example of **Praxair**, an industrial gas provider whose products enable customers to reduce their emissions by two times Praxair's own emissions.

- One of the two pillars of Walden’s climate engagement strategy is to ask companies to set science-based greenhouse gas reduction goals—a 55 percent absolute reduction in GHG emissions by 2050. Companies such as **Colgate Palmolive**, **Johnson & Johnson**, and **Qualcomm**, among many others, have now set science-based goals. The real world impact of those emissions reductions, should they be met, are not reflected in the portfolio footprint. While the footprint captures a snapshot of a single point in time, presumably the present value of the future carbon burden would be a better measure. (Unfortunately, such data is not yet available systematically.)
- If one motivation for footprinting a portfolio is to understand potential financial risk, the result must be taken in a broader context, including a company’s competitive position in its value chain. If carbon was priced and it is buying carbon-intensive inputs, is it going to be forced to pay more for its inputs? Are there readily available lower-carbon substitutes for a company’s inputs? If it is the producer of a carbon-intensive good or providers of a carbon-intensive service, is it able to pass potential additional costs on to its customers? Or are there other, lower-carbon products that will capture market share at the expense of the company? Currently, footprinting might alert investors to potential risk, but much more thorough analysis is necessary before drawing a specific conclusion.
- If an investor chooses to sell a company or avoid an industry because of its carbon footprint, it may help manage financial risk to the portfolio. However, this decision does not directly lead to a reduction in carbon emitted into the atmosphere. There is no reduction of emissions until a company changes its practices.
- While the analytics that accompany a portfolio footprint include a figure that represents the footprint in terms of carbon per million dollars invested, the focus tends to be on the portfolio’s performance relative to its peers and benchmark. As we noted above, Walden’s representative portfolio was 57 percent less carbon intensive than the benchmark according to Trucost. Comparisons to benchmarks are relative and don’t represent absolute improvement. As such, if the benchmark’s carbon intensity deteriorated, while Walden’s portfolio did not, it would appear as if we had improved. In a strict sense we had, but that improvement would not be witnessed in the real economy, and one could not track our improved performance to any less carbon being emitted into the atmosphere.
- Availability, accuracy, and comparability of GHG data are improving, but continue to be an issue, especially as you move down the market capitalization spectrum. In 2015, CDP received 5,625 total responses across all their programs, up from 253 in 2003. While two-thirds of the S&P 500 respond to the CDP climate survey, the response rate falls significantly among small cap companies. For example, only 41% of the Russell 1000® Index submitted a response to CDP in 2015. Because of gaps in data, footprint providers have developed distinct methodologies for estimating companies’ carbon emissions. For example, Trucost includes direct and indirect (referred to as Scope 1 and Scope 2) emissions, as well as certain supply chain emissions (e.g., business travel and logistics associated with procuring goods or services). On the other hand, MSCI analysis only currently includes Scope 1 and 2. Both providers have proprietary models to determine emissions when the company does not disclose GHG data.

The bottom line is that before taking any action based on the results of the portfolio carbon footprint, we at Walden believe caution should be exercised. Just as an investor would be ill-advised to buy or sell a stock based on a single financial metric alone, such as price-to-earnings ratio, investors should consider more than just the carbon intensity of a company when assessing its ESG performance. As new products and tools come to market, they inevitably have strengths and weaknesses. Over time, they tend to improve, or are replaced by better solutions to address the same problem. The primary providers of carbon footprints have efforts underway to improve footprinting.<sup>3</sup> Walden remains committed to building portfolios for clients that include companies committed to long-term sustainable business practice. Climate change is an essential piece of this analysis, and as such we remain fully supportive of efforts to develop tools that enable us to do so.

<sup>1</sup> <http://www.investmenteurope.net/regions/france/french-institutionalinvestors-to-disclose-carbon-footprint/>

<sup>2</sup> International Energy Agency (IEA). Energy Technology Perspectives 2012.

<sup>3</sup> For example, see the MSCI Issue Brief “Carbon Footprinting 101: A Practical Guide to Understanding and Applying Carbon Metrics,” and “Portfolio Carbon Data: The Quality Imperative” from Trucost.

Portfolio companies are highlighted in bold.

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