



Walmart's Dirty Energy Secret

How the Company's Slick Greenwashing Hides Its Massive Coal Consumption

Stacy Mitchell and Walter Wuthmann
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ILSR INSTITUTE FOR
Local Self-Reliance

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Executive Summary

In October, at an event broadcast live from Walmart's Arkansas headquarters, the company's top executives took the stage to extol its environmental leadership. The announcements they made that day would be covered widely by the press, including the *Boston Globe*, *Guardian*, and *New York Times*.

The event opened with a video listing Walmart's achievements over the preceding months: "We signed our largest multi-state solar power purchase agreement," the narrator says, over a shot of workers installing new, glossy solar panels. "We were recognized by President Obama for announcing that we will double the number of on-site solar energy projects." Then Walmart's CEO, Doug McMillon, and its vice president of sustainability, Manuel Gomez, addressed the crowd. "You get one point for launching a goal," said Gomez, "and nine points for execution... and what you saw in the video is exactly what we're doing: executing against these goals."

But off the stage and out in the real world, Walmart's sustainability initiatives are heavy on admiration-inducing goals and astonishingly light on execution. Nearly a decade ago, the company pledged to shift to 100 percent renewable energy and acknowledged its responsibility to reduce its climate emissions as quickly as possible. Today, however, Walmart remains as deeply committed as ever to the dirtiest fuels, especially coal. It derives only 3 percent of its U.S. electricity from its renewable energy projects, down from 4 percent two years ago.

In this first-of-its-kind analysis, ILSR provides new information about Walmart's energy mix and environmental footprint. We calculate the total electricity use, coal-fired power consumption, and resulting carbon emissions of every Walmart store and distribution center in the country in 2013. We also evaluate the company's renewable energy projects, finding that they are too small and located in the wrong places to have much of an impact on Walmart's coal use and climate emissions.

Our analysis finds that Walmart's electricity consumption entails burning a staggering amount of coal: 4.2 million tons a year. That's enough to give every kid in America a stocking filled with 126 pounds of the sooty stuff as a holiday present. Or, to measure it another way: If you dumped coal on a football field, you'd have to pile it 35 feet high, from end-zone to end-zone, just to power Walmart's U.S. stores for one week. Walmart sources more of its electricity from coal (40 percent) than the U.S. as a whole (39 percent) – a remarkable fact for a company that has touted its environmental responsibility for years. Indeed, we find that Walmart alone consumes 0.5 percent of all the electricity produced from coal in U.S., a stunning figure given the size of the entire national economy and population.

Walmart's use of coal-fired electricity in the U.S. accounts for 37 percent of its total reported global greenhouse gas emissions, and 74 percent of its U.S. emissions from electricity.

Burning all that coal pumps almost 8 million metric tons of carbon pollution into the atmosphere every year. Because coal releases more carbon to generate the same amount of power relative to other fuels, Walmart's use of coal-fired electricity in the U.S. accounts for 37 percent of its total reported global greenhouse gas emissions, and 74 percent of its U.S. emissions from electricity. The local consequences of the company's heavy reliance on coal are severe as well. In states like Missouri and Illinois, where

Walmart has no solar panels or other renewable energy projects, its stores draw power from a fleet of aging coal plants, which are poisoning the air and water. The Clean Air Task Force estimates that air pollution from coal plants causes over 13,000 deaths a year.

Walmart's renewable projects have hardly made a dent in its coal-generated power consumption and climate emissions, this report finds, in part because they are too modest in scale. Many other retailers are well ahead of Walmart in developing renewable power, including on-site installations. The renewable projects are also situated in the wrong places to have much impact. Two-thirds of Walmart's rooftop solar is located in places where coal makes up less than 20 percent of the electricity these stores pull from the local grid. Meanwhile, across the most heavily coal-dependent regions, Walmart has only a few green power initiatives.

As with every aspect of Walmart's operations, cost is the only factor dictating its energy decisions. Walmart buys the cheapest electricity it can find. In a few places, that can mean wind or solar. But across much of the country, where coal-fired electricity is cheap and plentiful, Walmart does not invest in renewable power. Publicly, Walmart promotes itself as a leader on green power, but it is more forthcoming with investors. "The only [solar] projects that we were doing are the ones that economically make sense at the store level," Marty Gilbert, Walmart's director of energy, told *Bloomberg News* in 2012.

Walmart wants all that coal kept cheap, too. The company contributes generously to politicians who support dirty energy. More than half of the candidates Walmart financed in the last election cycle voted with fossil fuel interests 100 percent of the time, according to voting data published by Oil Change International.

Nine years ago, standing on the same stage as Manual Gomez did last month, Walmart's then-CEO Lee Scott declared that the climate crisis was driving the company to act. "The science is in and it is overwhelming," he said. "We believe every company has a responsibility to reduce greenhouse gases as quickly as it can." But Walmart's unwillingness to invest in alternatives in much of the country, where grid power is cheap and heavy on coal, has meant that the company's reliance on the dirtiest fossil fuels, and its greenhouse gas emissions, have changed little from the day Scott made this speech. And its greenhouse gas emissions are even higher. This report provides context for evaluating Walmart's sustainability promises and brings new data to light that expose the company, not as an environmental leader, but as a massive, and committed, polluter.

Walmart's renewable projects have hardly made a dent in its coal consumption and climate emissions, this report finds, because they are too modest in scale and largely located in the wrong places.

INTRODUCTION:

The Dark, Sooty Truth Behind Walmart's Solar Veneer

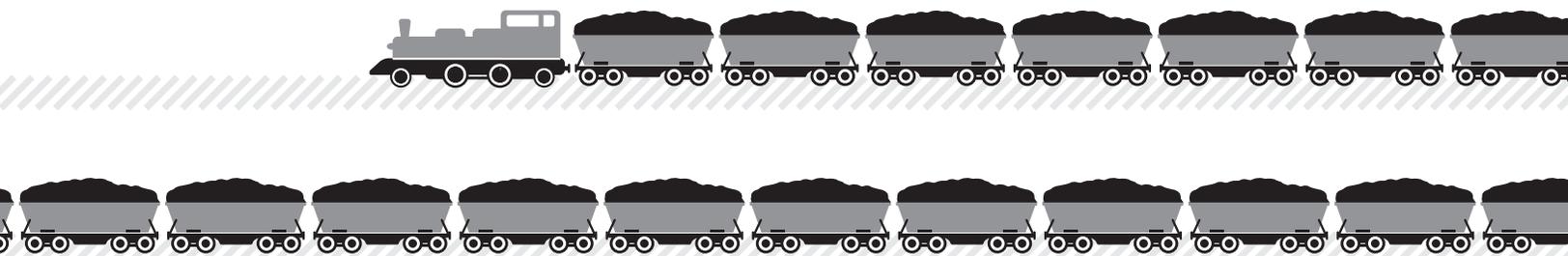
If you turn off Telegraph Road in St. Louis and wend your way past the Taco Bell and the Steak n' Shake, you'll find Walmart Supercenter #2213. Although this sprawling 220,000-square-foot store lacks a smokestack, an effluent pipe, or any of the other telltale signs we typically associate with air and water pollution, it is, nevertheless, a significant producer of both.

Last year, this Walmart supercenter consumed over 4 million kilowatt hours of electricity generated by burning coal. That's quite a lot of coal: some 2,200 tons worth, enough to fill 89 large Caterpillar dump trucks¹, and all for only a year's worth of power for a single store. The coal-fired electricity Walmart uses to power Supercenter #2213 and its three dozen other St. Louis area stores – none of which are equipped with solar panels or green energy supply contracts – comes from a fleet of aging and dirty coal plants, which are poisoning Missouri's air and water, and pumping out huge volumes of climate pollution.

When we think of consumers of dirty energy, we tend to think of big industry: paper mills, cement factories, electrical equipment manufacturers. But Walmart consumes more electricity than each of these industries. Most concerning, from both a health and climate perspective, Walmart is one of the nation's largest consumers of coal. In 2013, Walmart derived more than 40 percent of its U.S. power from burning coal. That works out to about 4,240,000 tons of coal – an amount so staggering, it's hard to wrap one's mind around. If the coal used to power Walmart's U.S. stores last year were loaded into coal-hauling railcars, the resulting train would stretch for

420 miles – the distance from Boston to Washington, D.C. If you filled a football field with coal, you'd have to pile it 35 feet high, from end-zone to end-zone, just to power Walmart's U.S. stores for a week.

Walmart's heavy reliance on coal contrasts sharply with the public image the company has cultivated for the last decade. In 2005, as opinion polls found growing numbers of people avoiding Walmart over concerns about its impact on workers and communities, then-CEO Lee Scott announced that the retail giant would become a leader in sustainability and pledged to shift the company's energy portfolio to 100 percent renewable power. Walmart has touted this commitment ever since, issuing a ceaseless stream of sustainability press releases and reports, staging solar- and wind-power photo-ops, and garnering invaluable headlines, such as "Why Walmart Loves Solar" (*San Francisco Chronicle*) and "Walmart Doubles Down on Solar Energy Plans" (*Wall Street Journal*). By 2010, the number of Americans reporting an unfavorable view of Walmart had fallen by half, and the company's growth in previously hostile states like eco-minded California had accelerated markedly.²





In 2013, Walmart consumed some 4,240,000 tons of coal to power its U.S. stores and distribution centers – enough to fill 42,300 railcars, creating a train 420 miles long. That’s the distance from Boston to Washington, D.C.

A Note about Our Analysis and Walmart's Lack of Transparency

To produce this report, ILSR calculated the total amount of electricity used by every Walmart store and distribution center in the country, including Sam's Club stores and warehouses, and the share of each facility's electricity that was produced by burning coal in 2013. We also calculated how much of each location's power came from Walmart-driven renewable energy projects (i.e., the company's on-site installations and its special green power purchases). To do this, we relied on data from the U.S. Environmental Protection Agency's Emissions & Generation Resource Integrated Database and the U.S. Energy Information Administration, as well as information disclosed by Walmart and reported publicly. For more details on our approach, see the appendix on methodology.

This analysis would have been easier, and perhaps unnecessary, if Walmart provided even the most basic information about its electricity consumption. Other than the share of its power that comes from its renewable energy projects, the company does not disclose how much of its electricity is generated by different sources, including coal, and does not provide data on its power usage either by location or by state. Walmart does not meet the standards of energy transparency that Greenpeace has established for information technology companies (which, in most or all cases, have a smaller energy footprint than Walmart). Among other things, Greenpeace says companies should disclose the "size of electricity demand; generation mix and associated carbon content..." for all of their facilities.¹⁰ A growing number of IT companies, including Facebook and Apple, do.

Remarkably, Walmart is nearly as opaque when it comes to the specifics of its renewable energy supplies. Every year, the company publishes hundreds of pages about its sustainability initiatives, including dozens of press releases, blog posts, and speeches, as well as its annual *Global Responsibility Report*, the most recent edition of which clocked in at 182 pages. These documents devote quite a bit of space to energy and seem very thorough on first glance. They are filled with facts, figures, and graphs. But even the closest of readers will find that it is impossible to use these publications to answer simple questions about Walmart's renewable projects, such as: How much electricity, in kilowatt hours, do Walmart's solar installations generate? Where are these projects located? In which states does Walmart purchase green power and how much of this power comes from different sources? How much is wind versus landfill gas¹¹, for example?

Though Walmart devotes extensive time and resources to promoting its renewable projects, the company does not provide any substantive information about them, and is unwilling to do so. Walmart declined our request to provide more information about the overall electricity generation mix supplying its stores or the geographic distribution and size of its renewable energy purchases and projects. Although we were ultimately able to arrive at well-supported answers to these questions by piecing together stray details in Walmart's published materials and relying on other sources, the company's lack of transparency is yet another indication of its lack of commitment to true reform.

In the minds of many, Walmart has come to be seen as a new energy pioneer. But, as this report shows, Walmart is in fact deeply committed to the oldest and dirtiest energy sources. The company's renewable energy projects have done little to slow its huge appetite for cheap coal-fired power. There are two reasons for this. One is that these projects are far too small relative to the huge scale of Walmart's operations. Ten years into its pledge to move to 100 percent renewable power, Walmart derives a mere 3 percent of its electricity from its renewable projects – 1 percent from its on-site solar, wind, and fuel cell installations and another 2 percent from the green power it buys under contract that's produced off-site and delivered into the grid.³

The other reason is that Walmart has deployed clean power in relatively few states. About three-quarters of its solar installations, for example, are in just two states and more than half are in California alone, a state where grid electricity is relatively free of coal-generated power. Meanwhile, Walmart uses virtually no renewable energy in large swaths of the country, including many of the most coal-intensive states – the states that would benefit most from clean power.

What explains the meager volume and limited geography of Walmart's renewable energy supplies? Only one factor governs all of the company's electricity choices, including its decision to buy green power at all: price. Walmart uses the cheapest power it can get. In limited circumstances, on the margins of the company's power needs, that means renewable energy. In California, where electricity rates are almost twice the national average, Walmart's solar and fuel cell contracts are cheaper than relying exclusively on the grid. Much of the company's off-site green power is wind power from Texas, where the market price of wind power has periodically dipped below zero in recent years.⁴

This single-minded commitment to cutting costs likely explains why Walmart's use of renewable power fell by about 25 percent over the last two years. As Texas wind prices inched up, Walmart's green energy purchases plummeted and the share of its electricity supplied by clean power dropped from 4

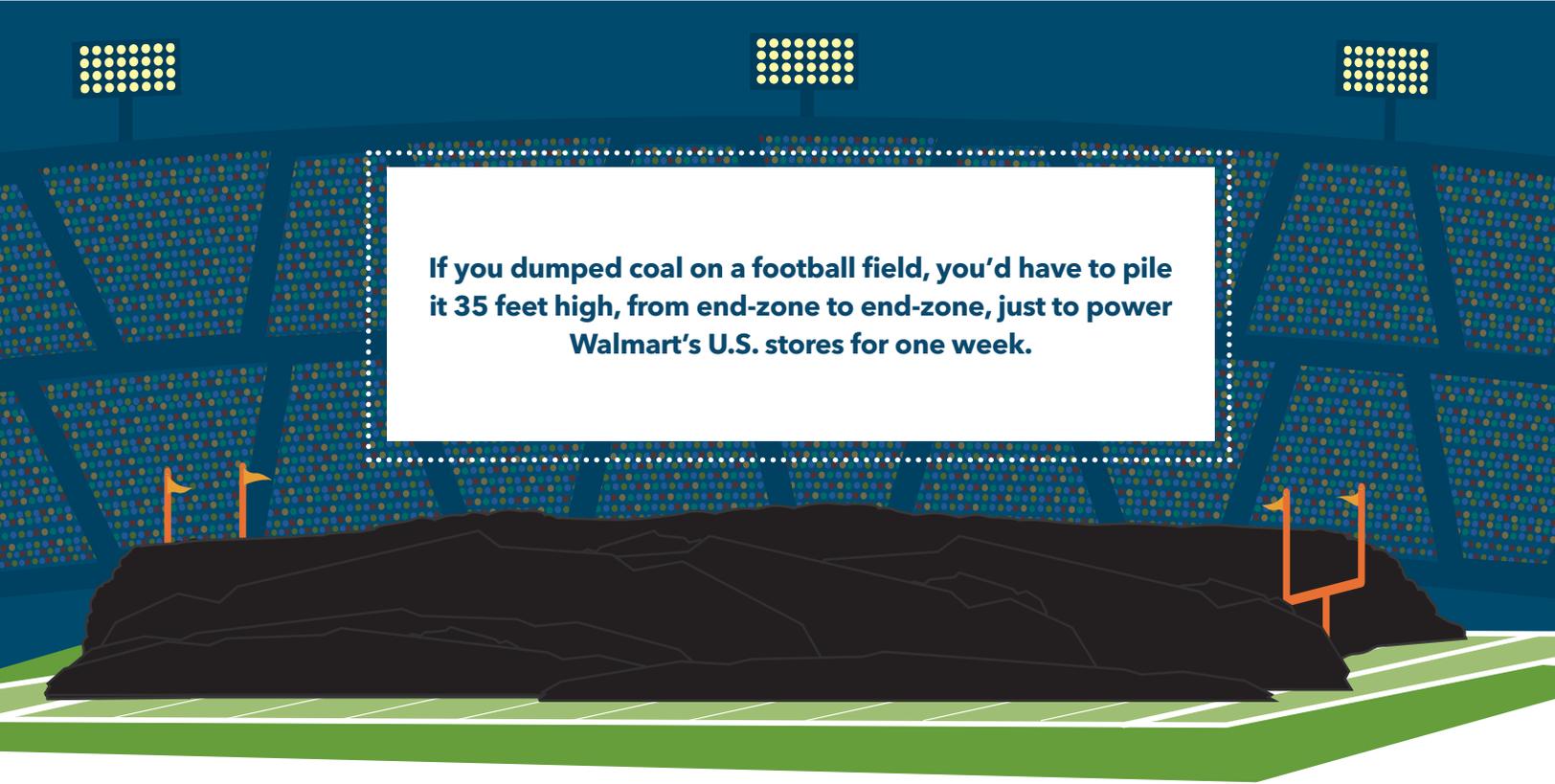
percent to 3 percent.⁵ Walmart itself has occasionally acknowledged that cost is all that matters, particularly when communicating with investors.⁶

In most of the country, the cheapest choice is still standard grid power, and the cheapest electricity of all comes from coal⁷, which, despite all of Walmart's sustainability talk, the company continues to consume in stunningly vast quantities. Coal supplies a larger share of the company's electricity than the country's as a whole. Further evidence that Walmart has no real intention of moving the U.S. electricity supply in a sustainable direction comes from the company's political donations. Walmart is one of the nation's top corporate contributors to political campaigns and its donations skew heavily in favor of politicians who support fossil fuel interests.⁸

The consequences of this situation are both local and global. People living near dirty coal plants – communities that are disproportionately low-income and people of color – suffer from elevated

rates of disease and death. Meanwhile, burning coal for electricity is a leading contributor to global warming. A decade after pledging to be a leader on the environment, Walmart's global greenhouse gas emissions are higher than ever. If it were included in the Greenhouse 100 Polluters Index, a list that is limited to heavy industrial firms, Walmart would take the 33rd spot, just a hair behind Chevron, America's second largest oil company.⁹

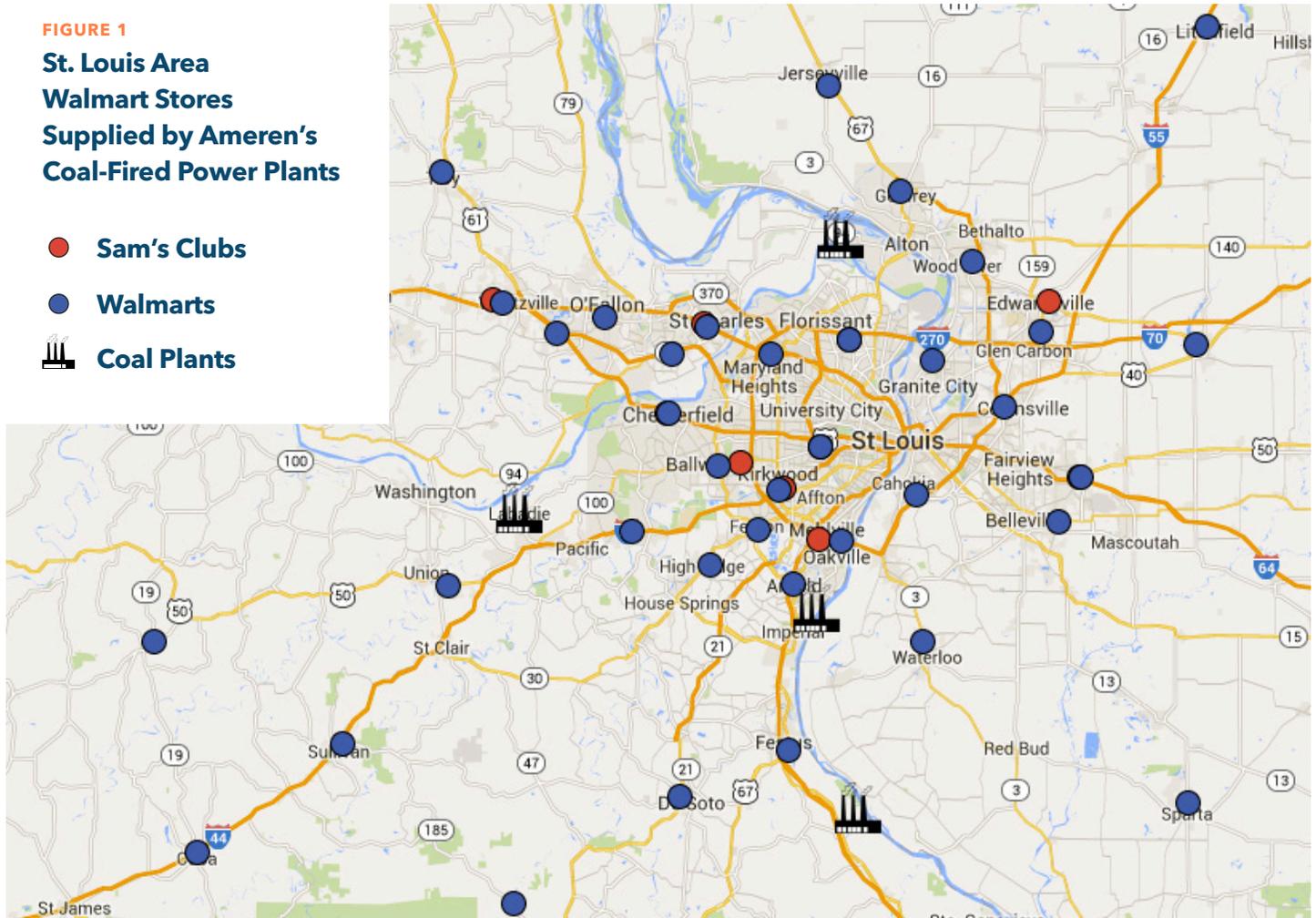
Nevertheless, Walmart continues to tout its supposed commitment to renewable energy, marshaling as much public relations value as it can get out of every solar panel, especially in West Coast states and in the Northeast, where the company is not yet as dominant a market player as it is elsewhere. Meanwhile, regions that have long since acquiesced to Walmart's business model are left to bear its pollution. Places like Missouri.



If you dumped coal on a football field, you'd have to pile it 35 feet high, from end-zone to end-zone, just to power Walmart's U.S. stores for one week.

The Real Price of Coal

On September 1, 2011, St. Louis residents awoke to an alarming report in the *St. Louis Post-Dispatch*¹². The coal ash disposal ponds at the Labadie coal-fired power plant, which lies just to the east of the city along the Missouri River, and about 40 miles from Walmart Supercenter #2213, had been leaking at a rate of 50,000 gallons a day for almost two decades.



As with many coal plants, at the Labadie plant, leftover coal ash – a combination of the fine powder that's captured by filters in the plant's smokestacks and the courser particles that fall to the bottom of the plant's boilers – is stored in open ponds, which can seep into groundwater and rivers. No one knows how much groundwater Labadie's leaking disposal pond has contaminated, notes Sarah Edgar, a local organizer with the Sierra Club's Beyond

Coal campaign, because the state does not require monitoring.¹³ The only information we do have was released accidentally. Ameren, the utility that owns the Labadie plant, inadvertently disclosed an internal report, which detected arsenic levels in the groundwater at six times the federal safety standard.¹⁴ "We are damaging an entire generation," laments Patricia Schuba, another local environmental activist.¹⁵

As acute as the local effects of coal are, its global impacts on climate are even more of a threat. Burning coal is responsible for 34 percent of total U.S. greenhouse gas emissions.

There is nothing particularly unusual about Labadie's leak. Toxic coal ash ponds leaking into groundwater and spilling into rivers have become a disturbing fact of life across much of the country, which is dotted with hundreds of power plants that park their coal ash in open-air ponds. A poisonous stew of heavy metals, including lead, mercury, arsenic, and selenium, the contaminants in these ponds harm ecosystems and have been linked to a range of human illnesses, from developmental problems in children to elevated rates of cancer. One preliminary EPA risk assessment found that people living within one mile of unlined coal ash ponds have a significantly higher risk of cancer, on par or worse than smokers.¹⁶ Sometimes these coal ash ponds bust open altogether, pouring thousands of tons of toxic ash into rivers, polluting drinking water, and even destroying homes, as has happened in recent years in both Tennessee and North Carolina.¹⁷

Coal-fired power plants are also a major source of air pollution, with effects that are local, regional, and global. Burning coal releases soot, as well as sulfur dioxide (SO₂) and nitrogen oxides (NO_x), which form airborne acidic particles. These miniscule pollutants are especially dangerous; because of their small size, they are absorbed directly into the bloodstream and transported to vital organs, evading the lungs' natural defenses. These particles can cause heart attacks, exacerbate respiratory illnesses, and lead to cancer. The Clean Air Task Force estimates that fine particle pollution from coal plants caused nearly 13,200 deaths in 2010.¹⁸ The "adverse effects, including excess mortality, occur even at low ambient

concentrations of fine particles – suggesting there is no 'safe' threshold for this type of pollution," the group concluded.

As acute as the local effects of coal are, its global impacts on climate are even more of a threat. Coal accounts for three-quarters of the carbon pollution produced by generating electricity in the U.S., even though it supplies only 39 percent of our power.¹⁹ All told, burning coal is responsible for 34 percent of total U.S. greenhouse gas emissions.²⁰

Although dozens of coal plants have been shuttered in recent years and coal has declined modestly as a share of our electricity mix (supplanted mainly by natural gas), many of the nation's coal-fired power plants seem unlikely to be taken offline any time soon, absent significantly more pressure to do so. Ameren intends to keep the 44-year-old Labadie plant, one of four aging coal plants that ring St. Louis, running until 2042. While many citizens like Schuba are pushing to take the state's energy mix in a new direction, it's an uphill fight as long as top power consumers like Walmart are eager for the utility's cheap coal-fired electricity.

Walmart's Heavy Coal Consumption

Walmart's electricity choices matter in part because the company is one of the nation's top consumers of power. It's hard to fully appreciate the sheer scale of Walmart's U.S. operations and their appetite for electricity. If Walmart were a state, it would rank ahead of 12 states in total electricity consumption.²¹

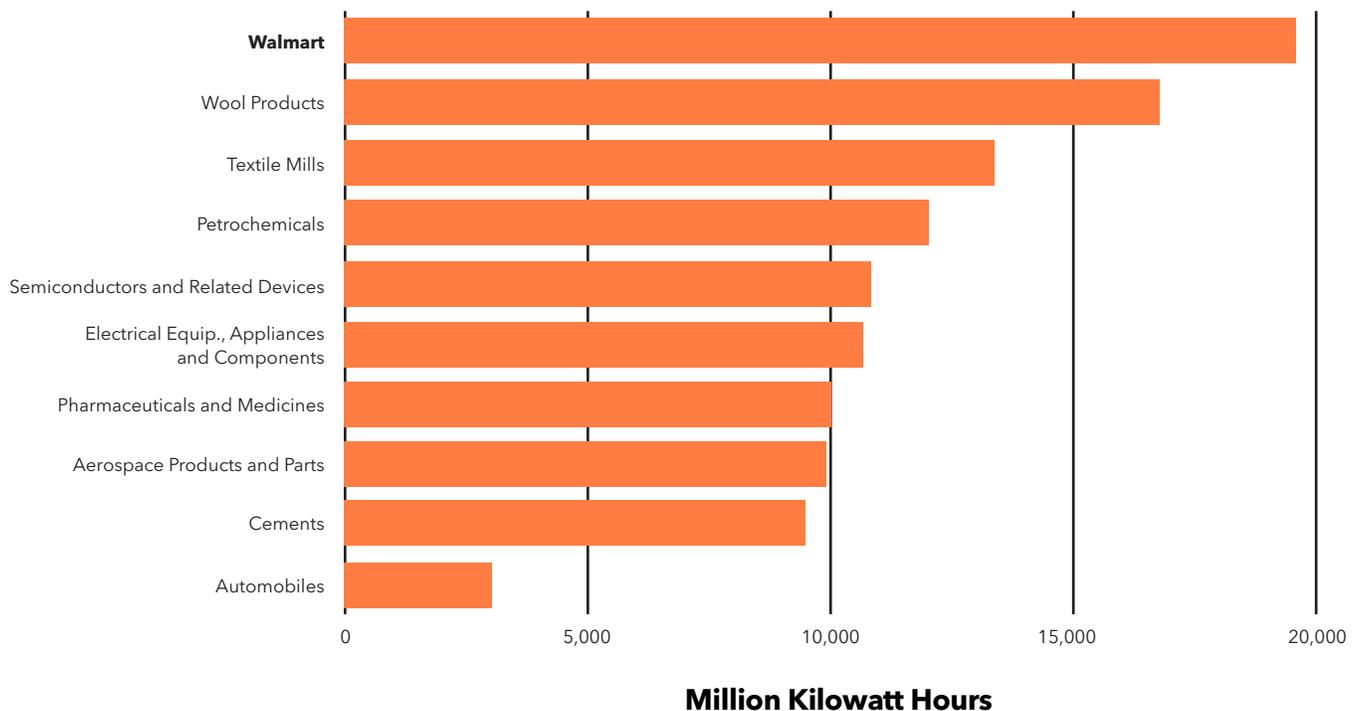
Walmart uses more electricity than the residents of Alaska, Delaware, Hawaii, Maine, Rhode Island, and Vermont *combined*.²² Walmart is a bigger consumer of power than many manufacturing industries, from automobiles to wood products (Figure 2). Its U.S. energy use – 19,500,000 megawatt hours – equals the power consumption of every industrial facility in New Jersey and West Virginia put together.²³

Almost a decade ago, when Walmart announced it would become a sustainability leader and shift to renewable power, then-CEO Lee Scott declared that the climate crisis was a key motivation. "The science is in and it is overwhelming," he said. "We believe every company has a responsibility to reduce greenhouse gases as quickly as it can."²⁴ But Walmart's unwillingness to invest in alternatives in

FIGURE 2

Annual U.S. Electricity Consumption: Walmart vs Major Manufacturing Sectors

Source: Walmart, *CDP 2014 Information Request*; U.S. Energy Information Administration, *Total Consumption of Electricity by Manufacturing Industry and Region, 2010*



If Walmart were to give away all that coal for the holidays, every child in America would find his or her stocking filled with 126 pounds of the stuff.

much of the country, where grid power is cheap, and heavy on coal, has meant that the company's reliance on the dirtiest fossil fuels has changed very little from the day Scott made this speech. And its greenhouse gas emissions are even higher.²⁵

Today, Walmart derives over 40 percent of the power it uses from coal, the most climate-damaging electricity source. In 2013, Walmart powered its U.S. stores and distribution centers with electricity that entailed burning some 4,240,000 tons of coal – enough to fill 42,285 railcars, creating a train about 420 miles long. If Walmart were to give away all that coal for Christmas, every child in America would find their stocking filled with 126 pounds of the stuff.²⁶

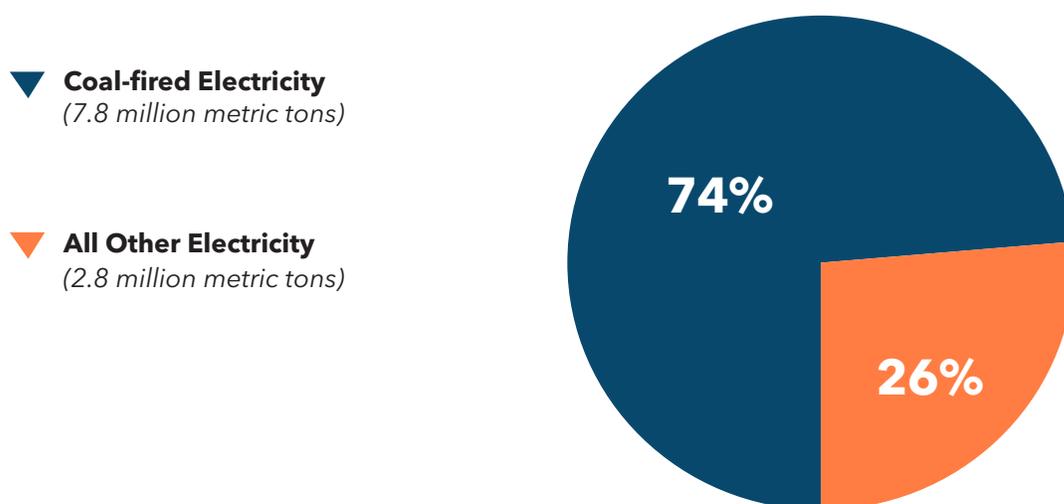
Burning all of that coal last year produced about 7.8 million metric tons of CO₂, which, because coal is

so much more carbon-intensive than other power sources, accounted for 74 percent of Walmart's U.S. greenhouse gas emissions from electricity consumption and 37 percent of its total reported global climate emissions (Figure 3).

Although information on other companies' electricity consumption is hard to come by, Walmart is almost certainly one of the largest end users of coal-generated power in the country. In fact, our analysis indicates that *one-half of one percent of all the coal burned in the U.S. for electricity* is consumed by Walmart alone.²⁷ In 19 states, the company's electricity use requires over 100,000 tons of coal a year (Figure 4). While its California solar installations have been in the media spotlight, across much of the country, the real story of Walmart's energy consumption lies miles deep, buried in a mountain of coal.

FIGURE 3

Coal's Share of Walmart's U.S. Greenhouse Gas Emissions from Electricity

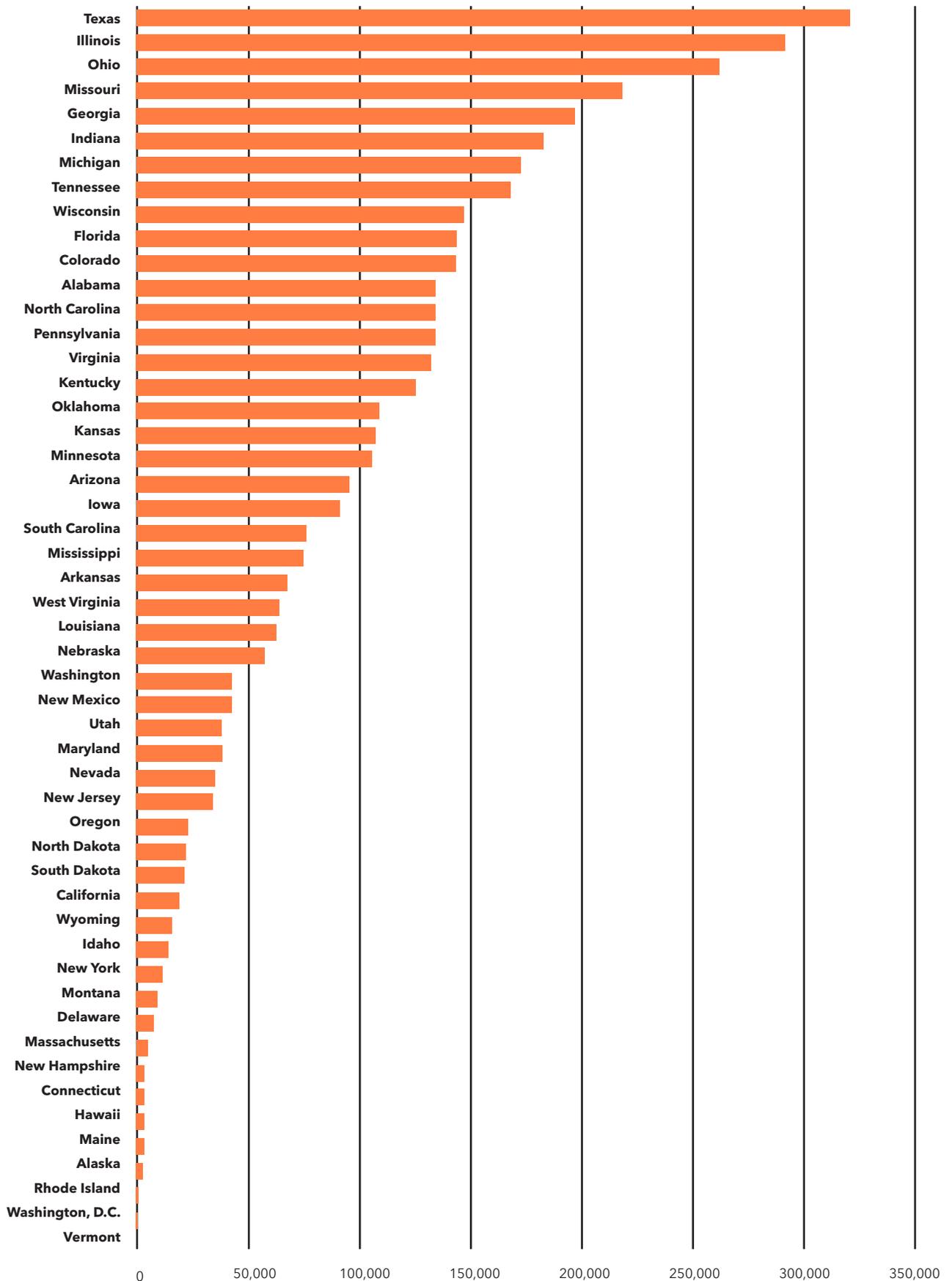


Source: Walmart's 2014 report to the CDP (for total emissions from U.S. electricity) and authors' analysis (for the coal share).

FIGURE 4

Walmart's Coal Consumption by State, in Tons

Source: Authors' analysis. See appendix on methodology for more detail



Walmart's Miserly Approach to Renewable Energy

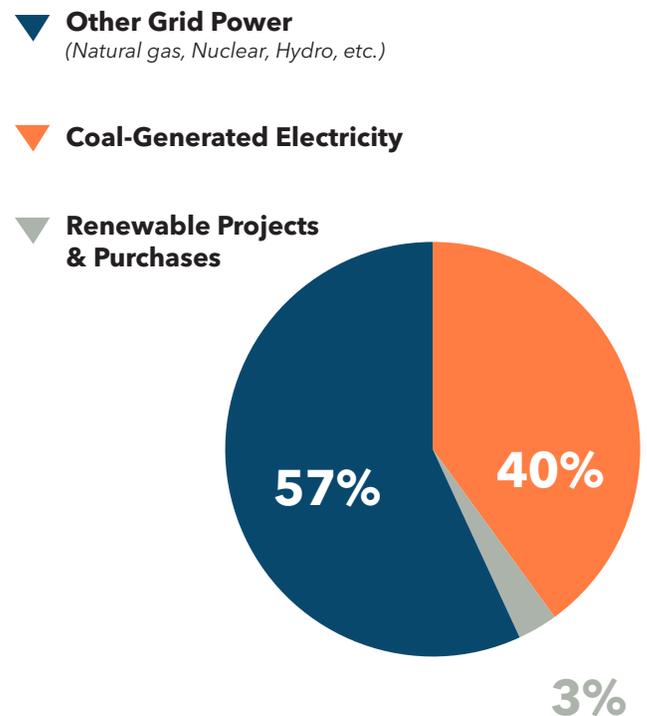
There are two reasons Walmart's renewable energy projects have made virtually no dent in the company's enormous coal consumption. One is that these projects are far too few in number and meager in capacity to amount to much. When isolated, they can sound sizeable, but measured against the massive scale of the company's operations, they are hardly so.

Take, for example, Walmart's 105 Megawatts of installed solar capacity. That's not an insignificant figure, but it's very modest in the context of a company as big as Walmart. Other retailers, including Costco, Ikea, Kohl's, and Staples, all have more on-site solar relative to their size than Walmart does.²⁸ Walmart's solar, together with its other on-site power-generating capacity (43 fuel cells and a handful of wind turbines), accounted for only 1 percent of the company's electricity in 2013. Another 2 percent of its electricity came from contracting to buy green power, chiefly wind power, produced by off-site generators (most of which was not third-party certified, according to the EPA²⁹). Altogether, Walmart's on-site renewable energy projects and its special green power purchases provided 608,000 megawatt hours of electricity last year – just 3 percent of its total consumption (Figure 5).

Walmart's renewable energy projects are not only modest, they are also located in the wrong places to make much difference when it comes to reducing the company's consumption of coal and its climate pollution. Over 90 percent of Walmart's clean energy – including both its on-site installations and its purchases of renewable power – is produced and consumed in places where coal comprises a smaller than average share of the power Walmart's stores are pulling from their local grid region (i.e., coal makes up less than 40 percent of the power mix). Indeed, Walmart sources more than one-quarter of its clean energy for stores located in places where coal accounts for just 5 percent or less of the power mix on the grid. (Figures 6 and 7.)

Meanwhile, across the 15 states where coal comprises a much larger than average share of the power Walmart stores draw from the grid (ranging from 55 percent of the electricity used by its stores in Kentucky to 73 percent consumed by those in Missouri), the company has only a few renewable energy initiatives, which together provide less than

FIGURE 5
Electricity Generation Mix for Walmart's U.S. Stores & Distribution Centers



Source: Walmart's 2014 CDP report (for the share provided by its renewable energy initiatives) and authors' analysis (for the coal share).

This single-minded commitment to cutting costs almost certainly explains why Walmart's use of renewable energy fell sharply over the last two years. As Texas wind prices inched up, the total amount of electricity provided by Walmart's renewable energy projects and purchases plummeted, dropping by over 200,000 megawatt hours, or more than one-quarter, between 2011 and 2013.³² Today, Walmart derives just 3 percent of its electricity from its own clean energy projects, down from 4 percent in 2011.

Challenged by ILSR and other environmental groups on why it has made so little progress on its oft-repeated goal of being supplied by 100 percent renewable energy – and in fact has slid backward over the last two years – Walmart issued a paper earlier this year implying that regulatory barriers in many states are the problem.³³ In these states, the company wrote, "it is against utility market rules/regulations for end-use customers like Walmart to purchase renewable energy directly from renewable projects as compared to going through the utility." But these rules are not actually barriers to sourcing renewable energy. What Walmart's statement represents instead is a reference to the fact that it will only install or purchase clean energy if it can find a way to pay less than the price the local utility offers for its standard mix of dirty grid power.

Many small businesses are making a faster shift to renewable power than Walmart is, despite what is often a considerably larger financial burden.

Other retailers, however, are installing renewable energy in the very same states that Walmart has bypassed, supposedly hindered by regulation. Many small businesses even are making a faster shift to renewable power than Walmart is, despite what is often a considerably larger financial burden, due to

their small scale and higher cost of credit. Back in St. Louis, for example, about ten miles from Walmart Supercenter #2213, sits Park Avenue Coffee, a locally owned coffee roastery and coffeehouse with a full complement of solar panels on its roof. Over the course of the year, the panels will provide all of the business's electricity needs, notes owner Dale Schotte. The investment in both the solar installation and the company's ultra-efficient coffee roaster were considerable, he says, but "it's been a priority for us to do the right thing."³⁴

Many national chains are also well ahead of Walmart. Ikea, for example, has installed rooftop solar panels on over 90 percent of its U.S. stores.³⁵ While Walmart has solar in just 12 of the 50 states where it operates, Ikea has solar in 20 of its 22 states. This list includes 11 states where Walmart has no solar, among them some of the heaviest coal-using regions, including Michigan and Minnesota. Ikea's latest solar installation is planned for a store outside Kansas City, on the Kansas side of the border, a state where Walmart has 79 stores, none of which have solar.³⁶ Ikea is not alone. Many other big companies, including other retailers, are ahead of Walmart, according to the EPA. Kohl's, for example, derives twice as large a share of its power from rooftop solar panels and other on-site renewable energy installations as Walmart does, and buys enough green electricity to supply the rest, making it a retailer with 100 percent renewable power.³⁷

Other big companies, outside the retail sector, are also doing much more. When Facebook decided to build a data center in Iowa – a state with a power supply that is heavy on coal and where Walmart has no renewable energy projects – it worked with a local utility, MidAmerican Energy, which ultimately agreed to invest \$1.9 billion in a wind farm. The project is the largest investment in renewable energy in the state's history and the largest single order of wind turbines in the world.³⁸

Walmart has not only declined to make these deeper investments, but even in states where the rules allow it to buy directly from power generators, the

As a rule, Walmart uses the cheapest power it can get. With investors, the company is more forthcoming about the limits of its interest in renewable energy.

company drives such a hard bargain that it may end up walking away with no renewable energy at all. “They are very demanding when it comes to really low PPA [power purchase agreement] prices,” noted one solar industry insider who agreed to be interviewed only on condition of anonymity. Tucked into the fine print of its *2013 Global Responsibility Report*, the company acknowledges as much, explaining that its use of renewable energy fell in 2012 because it was “unable to renegotiate an expiring contract [for renewable power] with competitive pricing.”³⁹

When communicating with the media, the public, and environmental audiences, Walmart presents its renewable energy projects as an indication of its social responsibility and, more significantly, as evidence of the positive nature of its transformational effects on our economy. The company would have us believe that it uses its enormous power for good. In no fewer than five places in its 2014 Global Responsibility Report, Walmart uses the phrase “leverage our size and scale” (or a variation thereof) to describe its green energy initiatives.

But the only thing Walmart actually uses its market power to achieve is its own growth. With investors, it is more forthcoming about the limits of its interest in renewable energy. “The only [solar] projects that we were doing are the ones that economically make sense at the store level,” Marty Gilbert, Walmart’s director of energy, told *Bloomberg News*.⁴⁰ “It has sometimes been difficult to find and fund low-carbon technologies that meet our ROI requirements,” notes the fine-print of its *2012 Global Responsibility Report*. An acronym familiar to investors, but not necessarily the public, ROI stands for “return on investment.” Last year, Walmart reported profits of \$17 billion.

How Walmart Protects the Dirty Energy Status Quo

In what is perhaps its dirtiest energy secret of all, even as Walmart talks up sustainability, behind the scenes, the company is actively supporting political candidates who champion fossil fuel interests. This duplicity may well be the most egregious aspect of its green-washing, as Walmart's campaign dollars are helping to ensure that Congress continues to favor coal and other fossil fuels and block legislation that would curb climate emissions and expand renewable energy.

As one of the largest political donors in the country, Walmart has enormous influence. Since 2003, the company has given, through its political action committee (PAC), over \$22 million to federal and state candidates and political parties.⁴¹ Walmart's campaign cash is bad news for clean energy. More than half of the 251 Congressional candidates Walmart and the Walton family supported during the 2011-2012 election cycle received a 100 percent Dirty Energy Money score from Oil Change International – meaning they voted with fossil fuel interests *all of the time*.⁴²

These lawmakers voted for bills that would block the EPA's ability to regulate greenhouse gasses and approve the construction of the Keystone XL tar sands pipeline. Most notably, they also voted to prohibit federal pollution standards for coal ash, something that hundreds of communities with coal plants in their midst, like those living near the Labadie plant in St. Louis, desperately need. While the remaining candidates financed by Walmart and the Waltons fell short of the 100 percent Dirty Energy voting record, one-third of them still sided with oil, coal, and gas interests most of the time. Altogether, nearly 70 percent of the candidates financed by Walmart and the Waltons in the last election cycle spent their time in Congress working to maintain hazardous and outdated forms of energy and thwart a transition to a cleaner future.⁴³

Walmart's financial backing of dirty energy politicians makes it that much harder for community groups to have a voice in the energy policies that affect their

lives. Again, Missouri provides an instructive example. Many elected officials in the state, awash in campaign contributions from both Walmart and the fossil fuel industry, continue to put the financial interests of big coal consumers over the health of their citizens. Since 2005, Walmart has contributed \$194,320 to Missouri politicians, including some of the state's biggest coal supporters.⁴⁴ At the state level, Walmart helped finance the last three campaigns of Missouri House Speaker Tim Jones, who went to bat this year to try protect coal plants from new EPA rules that could force them to cut their CO2 emissions.⁴⁵

Altogether, nearly 70 percent of the candidates financed by Walmart and the Waltons in the last election cycle spent their time in Congress working to maintain hazardous and outdated forms of energy.

Among Missouri's federal politicians, Walmart was a long-time supporter of U.S. House Representative Jo Ann Emerson, who led the push for legislation in 2011 that would have barred the EPA from regulating coal ash as hazardous waste at sites like Labadie.⁴⁶ Emerson has since left Congress to lobby for the electricity industry. Meanwhile, Walmart has channeled its support to Congressman Billy Long, who has co-sponsored legislation to stop the EPA from regulating CO2 emissions from coal plants.⁴⁷

CONCLUSION:

Walmart Needs to Invest in Being a Better Company, Not a Bigger One

For nearly a decade, Walmart has been promoting itself as a clean energy pioneer, but lurking beneath this carefully constructed veneer lies a dirty energy secret: a company with a deep and abiding commitment to one of the oldest and most polluting sources of electricity of all, coal. The scope of Walmart's coal consumption is staggering – as is its refusal to forego even a penny of short-term profits to invest in a meaningful shift to renewable power, and its financial backing of lawmakers who protect fossil fuel interests and block action on climate pollution.

Despite how little of its electricity Walmart actually derives from its renewable energy projects, the company exploits them for every ounce of public image value they can provide, particularly in environmentally oriented places like California, Oregon, and New York. Walmart's stated goal of "100 percent renewable energy," like some kind of marketing virus, seems to infect more media stories than information about the actual scope of the company's renewable energy projects, which provide a mere 3 percent of its U.S. electricity, down from 4 percent in 2011.

Herein lies the core problem with Walmart's sustainability campaign: it's not a strategy for transformation, but rather a strategy for growth. Launched at a time when public concern about the company's impact on the economy was hindering its expansion, going green became a means, not of shrinking Walmart's footprint, but of expanding it. Walmart occupies much more of the U.S. landscape and controls a larger share of the economy than it did nine years ago. It's added over 800 new stores since 2005, many in liberal regions of the west and northeast. It now captures one in four dollars Americans spend on groceries, and controls more than half of food sales in more than 40 metro areas.⁴⁸

As it grows, Walmart often replaces more environmentally sustainable economic systems with its own highly polluting business model. The historic

multi-story buildings that comprise traditional neighborhood business districts, for example, are more energy efficient on average than modern big-box stores, according to federal data.⁴⁹ Having a thriving neighborhood business district, moreover, significantly reduces how much households have to drive for shopping and errands.⁵⁰

One of the dark tragedies of Walmart's greenwashing is that those who have been most hurt by its low wages and impact on manufacturing jobs and small businesses are often the very same people who suffer most from the company's heavy reliance on coal and its unwillingness to make real investments in clean energy. Those who live within three miles of coal-fired power plants, and thus bear some of the worst effects of their air and water pollution, are disproportionately people of color and low-income households.⁵¹

What should Walmart be doing? It should stop investing in being a bigger company and start investing in being a better one. That means paying a livable wage and making a real investment in renewable energy. It means no longer paving fields and forests for new stores. It means no longer crushing local economies, and allowing a diversity of small, locally rooted, and often far more sustainable enterprises and economic systems to take root. And it means making rapid and significant reductions in that four-million-ton mountain of coal.

Methodology

We obtained data on the location and size of every Walmart store and Sam's Club from the Chain Store Guide, and information on the location and size of its distribution centers from MWPVL International. We obtained data on Walmart's 2013 electricity consumption in the U.S. and the amount of power it derives from its renewable energy initiatives from the company's October 2014 report to the CDP (formerly the Carbon Disclosure Project).

To calculate Walmart's electricity usage per location, we divided its reported electricity consumption by its square footage, adjusting for the fact that, based on information the company has published about the power consumption of its distribution centers, its distribution centers use about half as much power per square foot as its stores. Our calculated average electricity usage for Walmart and Sam's Club stores – 25 kWh per square foot – is close to the average electricity usage of strip malls (22.3 kWh per square foot), according to the U.S. Energy Information Administration. In the absence of more detailed information from the company, we assumed that all Walmart stores use the same amount of power per square foot. There is undoubtedly some regional variation based on climate, but this is likely relatively small since refrigeration and lighting are the largest components of Walmart's electricity use.

To calculate how much of each store's electricity was derived from coal, we relied on the EPA's Emissions & Generation Resource Integrated Database (eGRID) and its subregional generation mix data. The preeminent source of air emissions data for the electric power sector, eGRID is based on available plant-specific data for all U.S. electricity generating plants that provide power to the electric grid and report data to the U.S. government. Although the eGRID subregion does not account for any imports or exports of electricity across subregions, the EPA notes, "Most of the system power within each of these eGRID subregions originates from within the eGRID subregion." Because the most recent edition of eGrid (9th edition) uses 2010 electricity data, and coal usage has declined in some areas of the country, we adjusted the subregional generation mix figures based on 2010 and 2013 state-level power generation data from the U.S. Energy Information Administration to arrive at an initial estimate of Walmart's coal consumption at each location in 2013.

We then factored in its renewable power initiatives – by individual location for its on-site installations and by subregion or state for its special green power purchases. For its on-site solar installations, we relied on data published by the Solar Energy Industry Association, which includes the capacity of each installation. We then estimated each installation's annual production using the PVWatts Calculator developed by the National Renewable Energy Laboratory. The Calculator estimates electricity production of a photovoltaic system based on hourly solar resource data derived from the solar radiation and meteorological conditions of that location. For Walmart's other on-site renewables, including fuel cells at 43 stores, a wind turbine at one distribution center, and small on-site wind projects at 5 stores, we relied on information disclosed by the company in media reports and in its sustainability publications to estimate the amount of power these projects generate.

Although we know the total amount of electricity Walmart derives from its off-site green power purchases, the company does not disclose specific information about the types of energy sources and where this power is produced and consumed. Based on information that Walmart has provided to the EPA's Green Power Partnership on the companies it contracts with (including Duke Energy, which has a large wind farm in Texas, and Gexa Energy, which provides wholesale power in Texas and California), and information Walmart has disclosed in previous years about its renewable energy supplies, we believe that the vast majority of Walmart's off-site green power consists of Texas wind energy. In addition, the company appears to be buying some green power in Georgia and has more recently entered into a contract for a small amount of electricity generated from landfill gas and supplied by WM Renewable Energy.

After factoring Walmart's renewable energy installations and special purchases, we arrived at estimates of its coal-fired power usage at each location. We converted this consumption to short tons of coal based on a conversion factor of 1,842 kWh per ton and used EIA conversion factors to figure the resulting CO₂ emissions.

Walmart's Annual Consumption of Coal-Fired Electricity and Related Carbon Emissions by State

	Number of Walmart & Sam's Club Stores	Number of Distribution Centers	Coal-Fired Electricity Consumption (in kWh)	Coal Consumption (in Short Tons)	CO2 Emissions Generated from Coal (in Metric Tons)
Alabama	123	3	249,740,000	135,600	250,400
Alaska	12	0	4,670,000	2,500	4,700
Arizona	123	3	177,500,000	96,400	178,000
Arkansas	109	15	126,380,000	68,600	126,700
California	293	15	35,540,000	19,300	35,600
Colorado	101	2	264,720,000	143,700	265,400
Connecticut	39	0	5,990,000	3,300	6,000
Delaware	10	1	15,080,000	8,200	15,100
Florida	322	8	268,210,000	145,600	268,900
Georgia	184	9	364,620,000	197,900	365,600
Hawaii	12	0	5,470,000	3,000	5,500
Idaho	25	0	27,390,000	14,900	27,500
Illinois	191	6	537,580,000	291,800	539,000
Indiana	123	8	338,670,000	183,900	339,600
Iowa	67	1	167,160,000	90,800	167,600
Kansas	80	2	200,240,000	108,700	200,800
Kentucky	101	2	232,170,000	126,000	232,800
Louisiana	107	2	116,220,000	63,100	116,500
Maine	25	1	5,180,000	2,800	5,200
Maryland	59	2	70,280,000	38,200	70,500
Massachusetts	52	0	9,210,000	5,000	9,200
Michigan	118	2	318,440,000	172,900	319,300
Minnesota	83	1	195,190,000	106,000	195,700

APPENDIX

Walmart's Annual Consumption of Coal-Fired Electricity and Related Carbon Emissions by State

Continued

	Number of Walmart & Sam's Club Stores	Number of Distribution Centers	Coal-Fired Electricity Consumption (in kWh)	Coal Consumption (in Short Tons)	CO2 Emissions Generated from Coal (in Metric Tons)
Missouri	142	3	402,700,000	218,600	403,800
Montana	15	0	16,990,000	9,200	17,000
Nebraska	45	1	106,620,000	57,900	106,900
Nevada	50	2	65,320,000	35,500	65,500
New Hampshire	31	1	6,550,000	3,600	6,600
New Jersey	68	0	63,740,000	34,600	63,900
New Mexico	48	1	77,450,000	42,000	77,700
New York	117	4	21,660,000	11,800	21,700
North Carolina	191	4	249,020,000	135,200	249,700
North Dakota	17	0	41,020,000	22,300	41,100
Ohio	175	3	484,000,000	262,800	485,300
Oklahoma	116	2	203,430,000	110,400	204,000
Oregon	45	1	44,070,000	23,900	44,200
Pennsylvania	158	5	246,980,000	134,100	247,700
Rhode Island	10	0	2,010,000	1,100	2,000
South Carolina	94	3	140,370,000	76,200	140,800
South Dakota	15	0	39,340,000	21,400	39,400
Tennessee	135	3	311,080,000	168,900	311,900
Texas	512	17	592,000,000	321,400	593,600
Utah	54	3	70,810,000	38,400	71,000
Vermont	5	0	640,000	300	600
Virginia	129	4	246,210,000	133,700	246,900
	4,836	146	7,803,620,000	4,236,900	7,824,600

Notes

1. According to Caterpillar specs for its 725 Articulated Dump Truck.
2. Zogby International poll conducted in November 2005; Walmart data as reported by the *American Prospect* in May 2011.
3. U.S. Environmental Protection Agency (EPA), "Green Power Partnership: Top Partner Rankings," Oct. 27, 2014.
4. "Fewer wind curtailments and negative power prices seen in Texas after major grid expansion," U.S. Energy Information Administration, Jun. 24, 2014.
5. U.S. Environmental Protection Agency (EPA), "Green Power Partnership: Top Partner Rankings," multiple years.
6. Ehren Goossens, "Wal-Mart Beats Apple, Ikea in U.S. Solar Installations," *Bloomberg Businessweek*, July 30, 2012.
7. Mike Ford, "Natural gas generation lower than last year because of difference in relative fuel prices," U.S. Energy Information Administration, Sept. 25, 2013.
8. Authors' analysis of data on Walmart's political donations from the Center for Responsive Politics and data on Congressional voting from OilChange International's Dirty Energy Money tool. (Some Walmart-supported candidates are not included in this count, because they either lost the election or were not scored by Oil Change International.)
9. Political Economy Research Institute, *Greenhouse 100 Polluters Index*, June 2013.
10. Gary Cook, *Clicking Clean: How Companies are Creating the Green Internet*, Greenpeace, April 2014, 43.
11. Walmart has recently begun to source some of the power it counts as renewable from generators that burn landfill gas. Many environmentalists do not consider this to be a clean energy source. In a 2010 report, for example, the Sierra Club Landfill-Gas-To-Energy Task Force wrote, "We have unanimously concluded that reliance on landfill gas to generate electricity results in increased net GHG [greenhouse gas] emissions."
12. Jeffrey Tomich, "Leaks from Ameren toxic waste pond in Labadie stir fears," *St. Louis Post-Dispatch*, Sept. 1, 2011.
13. Authors' interview with Sara Edgar, Sept. 24, 2014.
14. Authors' interview with Patricia Schuba, Oct. 2, 2014.
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16. U.S. Environmental Protection Agency (EPA), *Human and Ecological Risk Assessment of Coal Combustion Wastes*, Draft Risk Assessment, April 2010.
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20. U.S. Energy Information Administration, "FAQ: What are the sources of energy-related carbon dioxide emissions by type of fuel for the United States and the world?" Mar. 21, 2013.
21. Those states are: Alaska, Delaware, Hawaii, Maine, Montana, New Hampshire, North Dakota, Rhode Island, South Dakota, Vermont, and Wyoming. U.S. Energy Information Administration, *2012 Total Electric Industry Sales*.
22. U.S. Energy Information Administration, *2012 Total Electric Industry Sales*.
23. Ibid.
24. Lee Scott, "Twenty First Century Leadership," Speech delivered in Bentonville, AR, Oct. 23, 2005.
25. Walmart Stores, Inc., *Investor CDP 2014 Information Request*, Carbon Disclosure Project, Oct. 15, 2014.
26. According to the Annie E. Casey Foundation's analysis of 2010 census data, there are 74 million children in the United States.
27. Data on the total U.S. net electricity generation from coal-fired plants in 2013 is from the U.S. Energy Information Administration.
28. U.S. Environmental Protection Agency (EPA), "Green Power Partnership: Top Partner Rankings," Oct. 27, 2014; "Solar Means Business 2014: Top U.S. Commercial Users," Solar Energy Industries Association, Oct. 15, 2014.
29. The EPA explains third-party certification as follows: "Certification answers the question 'Does this product meet acceptable standards for quality?' Certified products meet widely accepted consumer and environmental standards and ensure the product you buy comes from eligible renewable resources and meets product-marketing standards. Certification ensures the quality of a green power product, but also validates the product's environmental attributes. Certification includes standards of conduct for ethical behavior, including marketing claims by suppliers, and requires regular reporting to monitor these claims."
30. Walmart has a long history of carefully monitoring electricity prices and looking for ways to cut costs. Back in 2002, Walmart formed a wholesale electricity company, Texas Retail Energy (TRE), which exists solely to purchase power for Walmart stores at wholesales rates in states where such an arrangement is legal. Walmart buys about 17 percent of its power through TRE.
31. "Fewer wind curtailments and negative power prices seen in Texas after major grid expansion," U.S. Energy Information Administration, Jun. 24, 2014.
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33. Walmart Stores, Inc., *Walmart's Approach to Renewable Energy*, May 2014.

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Continued

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41. Figures on Walmart's federal political donations are derived from data published by the Center for Responsive Politics.
42. A small number of Walmart-supported candidates are not included in this count, because they either lost the election or were not scored by Oil Change International. Authors' analysis of campaign contribution data from the Center for Responsive Politics and Oil Change International's "Dirty Energy Money" Congressional vote tracking tool.
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