

CHARTING THE ISSUES

ENERGY + CLIMATE CHANGE

OUR VISION: EFFICIENT ENERGY POWERED BY RENEWABLE SOURCES

Coffee's complex journey from a hillside in Colombia to a cup in Portland, Oregon uses energy all along the way. Energy runs our business and fuels our operations, which is why we're constantly looking for ways to improve our efficiency. Analysis of how we use energy across our value chain allows us to implement changes that we hope will contribute to mitigating our global energy crisis.

In addition to our efforts to reduce energy consumption, we are evaluating the sources of the energy we consume. Non-renewable resources, such as fossil fuels, are not sustainable solutions; however, all energy sources have trade-offs in the types and magnitudes of their environmental impacts. As one step in our commitment to sustainability, we are investing in renewable resources for our own operations while engaging in efforts to reduce our total energy consumption.

Scientists generally agree that the Earth's climate is changing rapidly, causing widespread changes in weather patterns and temperatures that lead to repercussions for habitats, the spread of disease, and the occurrence of extreme weather events.¹ If aggressive action is not taken in the coming decades to curb greenhouse gas emissions, it is likely that the average temperature will rise by several degrees Celsius above the pre-industrial average.¹ This level of warming is likely to cause a global impact by flooding coastal regions, harming certain agricultural productivity, and causing the extinction of species that cannot adapt, among other outcomes.¹

WHY IS ENERGY IMPORTANT TO US?

Energy production has reached a critical crossroads across the globe. Easy-to-access fossil fuels are rapidly being depleted, causing energy producers to turn to dirtier fuels that are more difficult to extract and refine, such as oil from tar sands.¹ At the same time, energy is a critical resource for the operation of our company and one of our biggest expenses. So, reducing our consumption is a win-win proposition. We're seeking out cleaner, renewable energy sources to positively impact our environmental emissions of greenhouse gasses and other pollutants that occur in our value chain.

As we work toward sustainability within the Farmer Brothers SEED framework of social, environmental and economic development,

climate change is a central issue within each pillar of the framework. It has the potential to impact all of our products and services, and none more so than in the production of our central offering: coffee. Coffee plants are highly sensitive to ambient temperature, and as the climate warms, many traditional coffee growing regions may prove unable to sustain a coffee crop due to changes in temperature or rainfall. For mountain-growing regions, land suitable for coffee growing may disappear as higher temperatures force cultivation to move higher up mountains, where land is less plentiful and soil quality is worse.

Researchers at World Coffee Research have told us that farmers will need to adapt their practices and their varieties to the changing conditions, and they'll be challenged with maintaining quality, taste, and consistency of supply. The taste of coffee is affected by how quickly the coffee tree grows, and with increasing temperature, the plant grows faster. The faster growth rate narrows the range of taste profiles.

Farmers struggling with these changing conditions may turn to alternative livelihoods. As a result, the number of coffee farmers could be reduced, potentially reducing the amount of coffee produced and driving raw material costs up. We believe that a stable business for us depends on a stable climate in which our coffee can be grown.

¹ IPCC (2007) *Intergovernmental Panel on Climate Change's Fourth Assessment Report*. <http://www.ipcc.ch/>.

In addition to the direct effects on our supply chain, we also believe climate change is one of the most pressing environmental issues of the coming century. That's why we're committed to delivering great products to our customers with less greenhouse gasses emitted along the way. We believe that demand for environmentally friendly manufactured products is a business differentiator for us, but we also think it is worth doing because it's the right thing to do.

WHAT OUR FRIENDS SAY ABOUT IT

"Climate change is a game-changer for all of us. Farmers will need to adopt more intensive farming practices to control for soil quality and humidity. Farmers may also have to move to higher elevations as temperatures rise at lower elevations, which may result in deforestation and loss of aquifer recharge areas."

Michael Sheridan, *Borderlands Coffee Project Director, Catholic Relief Services*

"Some customers are now asking about Farmer Brothers' sustainability efforts, sometimes anecdotally and other times for specific metrics or scorecards. Topics that are commonly inquired about include those around farmers and the supply chain, recycling, non-renewable energy use and water treatment."

Scott Siers, *SVP of Sales - National Accounts, Farmer Brothers*

HOW WE MEASURE IT

Using utility and fuel bills, Farmer Brothers tracks and reviews the amount of electricity we purchase and the fuels that we burn directly in our facilities on a monthly, quarterly, and annual basis. For our fleet of delivery trucks, we keep track of the amount of fuel used and distances driven in order to measure both total energy use as well as our fuel efficiency. In 2014, we also began to ask our suppliers and coffee producers about their energy use with plans to implement a more sophisticated supplier measurement process and platform over the next few years. See our Procurement Practices Issue Brief for more information.

At Farmer Brothers, sustainability is integral to how we do business, and we encourage our suppliers to respect and promote the same sustainable business values. Our forthcoming supplier measurement system will allow us to better understand our suppliers' sustainability commitments and performance. Supplier accountability and transparency is integral to our corporate responsibility and SEED model. We recognize that our suppliers are independent businesses and the exclusive employers of their employees and

we appreciate that they operate in different legal and cultural environments throughout the world. However, we encourage them to promote similar sustainability efforts because we believe the actions of these partners affect the Farmer Brothers reputation and level of trust we have earned from our customers and others.

Farmer Brothers manages its greenhouse gas emissions by annually measuring our carbon footprint, which is an inventory of all the greenhouse gas emissions occurring along our supply chain. In the past, we have limited our analysis to emissions in our own operations, which helped us identify actions we could take in within our own manufacturing and logistics to reduce our carbon emissions. However, we recognized that this wasn't enough. Starting with our 2014 footprint, we expanded the assessment to include the full value chain, from growing the coffee to serving it to consumers. This year, we submitted our first CDP Carbon report and plan to make this an annual event. CDP, formerly Carbon Disclosure Project, is an international, not-for-profit organization providing a global system for companies and cities to measure, disclose, manage and share vital environmental information.

Because our company aims to grow, we need to make sure our annual measurements are comparable so that we can determine whether we're improving. To do this, we report our emissions relative to total kilograms of coffee roasted. We refer to this as our *carbon intensity*. Of course, our business includes products and services beyond this, but coffee is our primary offering and is a reliable indicator of our growth.

"There are large opportunities for cost savings related to wasted resources—energy, packaging."

Mark Nelson, *Chief Finance Officer, Farmer Brothers*

To evaluate our progress, we compare our emissions to the prior year. Beginning this year, we are also comparing our emissions to our base year, 2014. We chose 2014 as our base year because it is the first year in which we have a carbon footprint that includes all of our sites, as well as our entire supply chain. We've also decided to position ourselves for eventually integrating our environmental performance within our financial reporting. This means we've shifted our measurement period from the calendar year to the fiscal year (July to June), making our 2013 and 2014 footprints

incomparable because they overlap in the time periods they cover. However, we will begin evaluating our progress with next year's footprint as we compare 2015 to 2014. Go to the *How we're doing* section to learn more about the numbers.

“Everything we know about how coffee is distributed in next 20 years will be radically different due to changing climate conditions and water availability.”

Ric Rhinehart, *Executive Director,*
Specialty Coffee Association of America

WHAT WE'RE DOING ABOUT IT

Farmer Brothers has set a long-term goal of reducing carbon intensity by 80% by 2050. This goal is based on the best available science regarding reductions that are needed to avoid catastrophic consequences of climate change—such as major changes in precipitation patterns, loss of glaciers, and rising sea levels—which start at about two degrees Celsius above baseline.² In order to reach our long-term goal, we have set the annual goal of a 4% carbon intensity reduction.

Our carbon footprint is managed by our VP of Sustainability and her team. The VP of Sustainability reviews energy metrics on a monthly basis to assess trends and patterns. On a quarterly basis, the Senior Leadership Team reviews the energy metrics, including a carbon footprint summary, to determine what, if any, risks have been or could be encountered as well as what has been done to mitigate those risks. Our CEO reports energy performance to the Board of Directors on a quarterly basis. Depending on the quarterly results, there may be additional analysis and action planning with the Direct Store Delivery, Transportation, or Operations departments.

Our carbon footprint means more to us than a number on a piece of paper. We intend to use the year-on-year evaluations to identify actions that will help us reduce our emissions. Since our carbon footprint tends to be dominated by the use of energy—electricity and fuels—we've focused our efforts on minimizing energy consumption.

Here are some of our success stories from 2014:

- For our delivery fleet, our drivers plan their routes in an effort to improve fuel efficiency. Each of our trucks has a Certified Clean Idle engine. And, to make truck idling a thing of the past, we've installed hybrid electric-diesel Auxiliary Power Units (APUs) for our trucks' sleeper berths, so drivers can get a good night's rest without running their engines.
- We purchased renewable energy credits for 100% of the electricity used at our headquarters and roasteries.
- At our Torrance roastery and headquarters, we installed an ELSPEC equalizer—a bank of capacitors and inductors, which flattens our energy demand spikes—that increased our average power factor from 75.3% to 95.1%. Power factor is an indicator of how much of a power system's capacity is available for productive work. Read as a percentage, the closer a power factor is to 1.0 or 100%, the more efficient the system. Having a low power factor is undesirable because it increases a load on a building's electrical system, and puts excess strain on the utility company providing the power. There is a penalty for having a power factor lower than 80.0%. Before we installed the ELSPEC, our power factor was approximately 78.1%. Facilities with low power factor draw more kVAs, requiring additional transmission and distribution system capacity or utility distribution capacitors.
- At our Portland roastery, we fixed leaks and over-production of air in our compressed air system, estimated to save 294,866 kWh and reduce consumption by 10.5 percent.
- At our Houston roastery, we replaced the roasters' circulating systems. This should reduce heat loss due to cracks and holes in the duct and refractory and it improve roast quality and safety by reducing the amount of smoke escaping the system while roasting.
- At our Houston Distribution Center, we initiated the replacement of all of the metal halide bulbs (250 watts) with CFL lamps (150 watts). The bulbs have been replaced in phases (before they are burned out). With the same output of lumens, we anticipate a savings of 138,000 kWh and a reduced consumption of 70% in our main warehouse and a savings of 188,000 kWh and a reduced consumption of 50% in our small warehouse.

² IPCC (2007) *Intergovernmental Panel on Climate Change's Fourth Assessment Report*. <http://www.ipcc.ch/>.

HOW WE'RE DOING

In past years, energy reduction happened sporadically across our sites when there happened to be a sustainability champion. Today, with education at our quarterly company-wide Town Hall meetings and visits from our VP of Sustainability, we have many sites building energy reduction into their culture. Sites are implementing policies that knock off “low-hanging” fruit, such as:

- Running meetings electronically by distributing soft copies and using a projector to show documents instead of printing hard copies.
- Enabling power-management settings on computers.
- Powering off computers at the end of the day.
- Switching off monitor and lights when away from desks for a meeting or lunch.
- Turning off lights when a room is empty.
- Unplugging electronic devices and chargers when not in use.
- Powering down all machines while not in use in warehouse areas.
- Replacing bulbs that burn out with energy-efficient ones.

As we move forward into next year, we plan to implement Standard Operating Procedures (SOP) that have built-in energy reduction steps as part of our company-wide lean manufacturing system. We have many projects happening across our 120 sites. In order to capture the complete impact, we're working to formalize the monitoring and evaluation process. Even as we work to develop a formalized management process, we are seeing our energy intensity go down.

Our corporate footprint for 2014 was approximately 414,098 metric tons of CO₂-eq. That's equivalent to 87,179 cars on the road for the year. Approximately 11% of that was due to direct emissions from our facilities and vehicles (Scope 1), approximately 1.0% was due to electricity that we purchased (Scope 2), and the rest came from our value chain (Scope 3). Most notably, 60% of our footprint came from the production of our products—coffee, tea, other beverages, spices and equipment.

Here are some technical details for how we calculate our carbon footprint:

- Greenhouse gases included: CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃ and more.
- Biogenic carbon emissions: Approximately 15 metric tons of CO₂-eq.
- Standards, methodologies, and assumptions used: The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition).
- Sources of emission factors and GWPs: ecoinvent v2.2, ecoinvent v3.1, IPCC Fourth Assessment Report, IMPACT2002+ vQ2.2, US EPA eGRID Year 2007, US EPA eGRID Year 2010 and US Input Output (I/O) Database v2002 System Expansion.
- Consolidation approach: Operational control.

Check out the dashboard in this report to learn more about our carbon footprint, or check out our first CDP Carbon report on www.cdp.net. We're told the scores will be available in Fall 2015.

2015 METRICS

GHG Emissions Scope 1

44,231

Metric tons CO₂e

Energy consumption by source

(non-renewable sources)

All units in terajoules (TJ)

On-road gas	141.1
Natural gas	135.8
On-road Diesel	300.7
Electricity	87.8
On-site propane	2.4

Total energy consumption 667.8