



SolarCity

2015 IMPACT REPORT

This report contains forward-looking statements that involve risks and uncertainties including, but not limited to, statements regarding the carbon payback of solar systems installed by SolarCity, the generation of Renewable Energy Credits, environmental offset equivalencies, ongoing efforts by SolarCity to improve its resource efficiency, its energy efficiency, its waste minimization efforts and its carbon footprint reduction efforts, large-scale manufacturing of solar panels in Western New York, adherence to a Global Supplier Code of Conduct, efforts to improve workplace safety, efforts to improve workplace diversity, employee training programs, job growth, efforts to make solar energy more affordable and accessible to consumers, and the growth in the scope of GivePower activities. Forward-looking statements should not be read as a guarantee of future performance or results, and will not necessarily be accurate indications of the times at, or by, which such performance or results will be achieved, if at all. Forward-looking statements are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in or suggested by the forward looking statements. You should read the section entitled "Risk Factors" in SolarCity's most recent quarterly report on Form 10-Q, which has been filed with the Securities and Exchange Commission and identifies certain of these and additional risks and uncertainties. We do not undertake any obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future developments or otherwise.

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ABOUT THIS REPORT

We strive to make our business as environmentally and socially sustainable as possible, and this is a report on our progress. Our mission is fundamentally about making the world’s energy supply cleaner and more affordable—which we believe is crucial to making the planet healthier, safer, and more prosperous.

The purpose of this report—our first Impact Report—is to assess the impact of our business and the actions of our customers on the planet and the communities where we work. The report is a valuable opportunity to be thoughtful and transparent about topics like the carbon footprint of the production and delivery of solar energy, employee diversity, and our philanthropic efforts. Our goal is also to identify areas for ongoing improvement as a socially responsible organization and one of the largest employers in the clean energy industry.

The report encompasses current and recent corporate activity over the past two fiscal years, providing information and data that conveys our company’s trajectory and vision.



ABOUT SOLARCITY

SolarCity is America's largest full-service solar power provider. We make clean energy available to homeowners, businesses, schools, non-profits, and government organizations at a lower cost than energy generated by burning fossil fuels like coal, natural gas, and oil.

Our approach is to install systems to the highest engineering standards while making adoption simple for our customers. We have revolutionized the way energy is delivered by giving customers a cleaner, more affordable alternative to conventional utility-provided electricity.

We have assembled one of the most experienced clean energy project design and installation teams in the world. As of December 31, 2015, we have installed systems in over half the US states, across more than 80 operation centers.

SolarCity's customers include hundreds of thousands of homeowners, hundreds of schools and universities, government agencies such as the U.S. Armed Forces and Department of Homeland Security, and well-known corporate clients, including eBay, Genentech, HP, Intel, Safeway, Walgreens, and Walmart.

We are transforming the way Americans use energy, providing 1 out of every 3 new solar electricity systems nationwide.

LETTER FROM THE FOUNDERS OF SOLARCITY

Today’s carbon-intensive energy sector is one of the global economy’s most environmentally damaging forces. Burning fuels like coal, natural gas, and oil has contributed enormously to warming our planet, polluting the air, and endangering precious water resources.

We cannot wait any longer to solve this problem. We must disrupt the status quo that has existed for a century. We must transform our energy system to something that fully supports, rather than undermines, life on this planet for decades to come.

Businesses have a major role to play in advancing solutions to global challenges. We founded SolarCity because we believe that sustainable energy—and solar power in particular—is a critical strategy to avoiding catastrophic climate change and making the world a better place.

Our success as a 21st-century business is ultimately measured in more than just dollars and cents. We measure ourselves—and expect to be assessed by others—

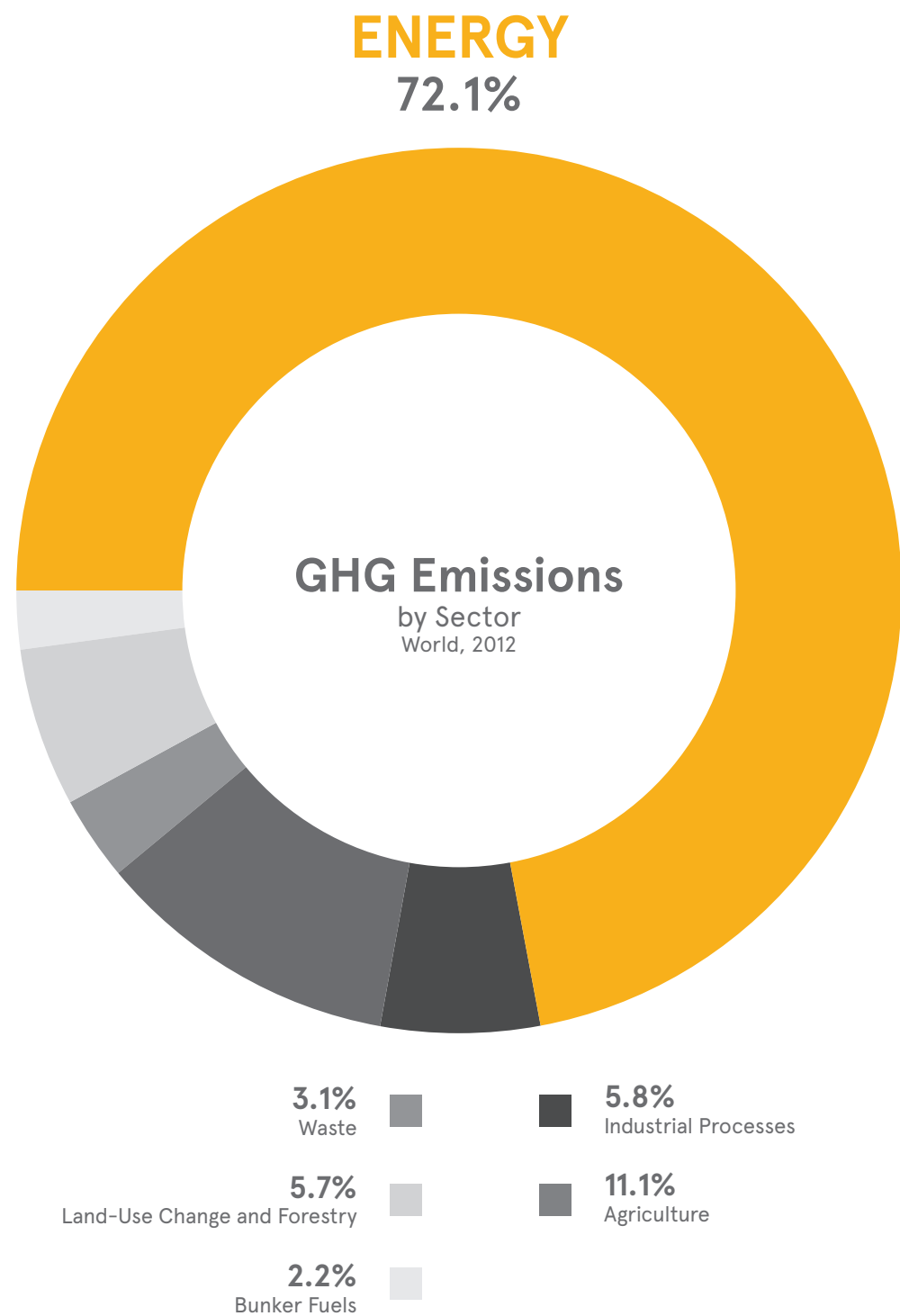
for our broader impact on the world: safeguarding the environment, improving people’s lives, building a diverse and inclusive workplace, strengthening communities, and helping those in need around the globe.

Our first Impact Report is an important opportunity for our company to gauge the environmental and societal impact of our work to date, and to be transparent about our progress. We hope that it serves as a springboard for reflection on our successes as well as areas for improvement.

We thank our thousands of employees, our hundreds of thousands of customers, and the billions of people on this planet who believe in a clean energy future.

We’re excited to help lead the way.

LYNDON AND PETER RIVE



More than 70 percent of the world's greenhouse gas emissions come from energy-related sources like electricity production, heating, and transportation.

WHY SUSTAINABLE ENERGY, AND WHY NOW

The world's dependence on fossil fuels is a major contributor to many of today's environmental problems—and is the key culprit driving global climate change.

More than 70 percent of the world's greenhouse gas emissions come from energy-related sources like electricity production, heating, and transportation. Increases in greenhouse gas emissions are linked to climate change.

Among strategies to combat climate change, replacing non-renewable energy sources with sustainable energy sources like solar and wind is indispensable. Producing electricity with renewable resources entails radically less carbon dioxide (CO₂) pollution than using natural gas or coal.

Electricity generation from fossil fuels is a significant source of local air pollution as well. In the United States, fossil fuel power plants are not just the country's biggest source of global warming pollution; they are also responsible for large **amounts** of harmful air pollutants like sulfur dioxide, nitrogen oxide, arsenic, and mercury.

The extraction and transport of fossil fuels likewise have serious consequences for our communities. In addition to the pollution from power

plant smokestacks, environmental degradation from fossil fuels is evident in tragedies like toxic chemical leaks, oil spills, and explosions.

Moreover, the finite nature of fossil fuels means they are not sustainable in the long-term and are susceptible to risks such as price volatility and geopolitical instability.

Solar energy, by contrast, produces clean power simply by converting sunlight to electricity, without releasing carbon pollution or other harmful pollutants. Its fuel source requires no excavating, transportation, or combustion in producing energy and provides a renewable way to power society and a growing economy.

All types of solar power—residential and commercial rooftops, large-scale solar power plants, community solar arrays, and beyond—have a central role to play in the sustainable energy transition.



Section 1

MINIMIZING OUR ENVIRONMENTAL FOOTPRINT

Creating a healthier environment for current and future generations is central to our mission. We have made progress in a number of environmental categories.

1A MEASURING AND MANAGING OUR CARBON FOOTPRINT

MEASURING AND MANAGING OUR CARBON FOOTPRINT

As SolarCity’s mission is focused on creating a low-carbon future for the world, it is important that we ensure our own carbon footprint is kept to a minimum.

This year, we comprehensively estimated our carbon footprint for the first time—assessing it both for fiscal years 2014 and 2015. Our 2014 carbon footprint results were verified for accuracy by an independent third-party (see Appendix A). Our 2015 footprint assessment represents a rigorous extrapolation from the verified 2014 results—accounting for factors such as additions in company building space, greater procurement of solar panels, and other growth in operations.

The values reported in Tables 1.1-1.3 explicitly account for SolarCity operations and the carbon emissions associated with the manufacture of solar panels, but not the carbon footprint of indirect activities such as raw material extraction or long-distance shipping. However, these other aspects are reflected in subsequent discussion and Charts 1.3-1.4, which present values for 2015 carbon emissions based on lifecycle analysis considerations.

For full details regarding our scope of analysis, calculations, and third-party verification, see Appendix A.

Given the rapid growth of our company and operations, our total carbon footprint increased in 2015 relative to the previous

year. However, our carbon footprint per megawatt of installed solar power actually decreased, from 433 metric tons CO₂/MW in 2014, to 409 metric tons CO₂ / MW in 2015.

As shown in Tables 1.1-1.3, the carbon emissions associated with the manufacture of solar panels accounted for the majority of our reported carbon footprint. We are aware of the carbon-intensive profile of panel manufacturing today. It is an issue that we continue to monitor closely as a purchaser of panels, and increasingly as a panel manufacturer ourselves (in our Silevo division). For more details on our vision for lowering the carbon footprint of panel production, see section 1D (“Responsible Manufacturing”).

A BROADER PERSPECTIVE ON OUR CARBON FOOTPRINT

As a company that deploys clean energy infrastructure, a critical test for our carbon profile is whether our efforts contribute to a net reduction of carbon emissions. This outcome requires that, in a given year, the deployment of solar systems that we have installed must *avoid* more carbon emissions (by providing an alternative to today’s carbon-intensive power grid) than we as a company *produce*. We are passing this test by a significant margin.

TABLE 1.1

Our Carbon Footprint in 2014

Type of Emissions	Metric Tons of CO ₂
Direct Emissions (Scope 1) Company fleet vehicles and on-site natural gas consumption	16,359
Purchased Electricity (Scope 2) Offices and operation centers	1,952
Other Indirect Emissions (Scope 3) Estimated: Solar panel manufacturing, balance of systems equipment, employee air travel	199,870
Total Emissions	218,181 metric tons of CO ₂

TABLE 1.2

Our Carbon Footprint in 2015

Type of Emissions	Metric Tons of CO ₂
Direct Emissions (Scope 1) Company fleet vehicles and on-site natural gas consumption	29,759
Purchased Electricity (Scope 2) Offices and operation centers	7,070
Other Indirect Emissions (Scope 3) Estimated: Solar panel manufacturing, balance of systems equipment, employee air travel	319,301
Total Emissions	356,130 metric tons of CO ₂

TABLE 1.3

Metric Tons of CO₂ emitted
per MW installed

	Megawatts of solar power installed	Metric Tons of CO ₂ Emitted	Metric Tons of CO ₂ per MW installed
2014	504 MW	218,181 tons CO ₂	433 tons CO ₂ /MW
2015	870 MW	356,130 tons CO ₂	409 tons CO ₂ /MW

CHART 1.1

CO₂ footprint per
MW installed



5.5% year-over-year reduction
in carbon intensity



**DISCLAIMER REGARDING THE DISCUSSION
OF ENVIRONMENTAL BENEFITS AND RENEWABLE
ENERGY CREDITS**

For the purposes of this report, we have identified the carbon reductions and environmental benefits that originate from the systems we have installed. However, we cannot and do not necessarily claim legal ownership of those reductions or benefits. That ownership contractually resides with the party that owns the Renewable Energy Credit (REC) associated with a given unit of solar energy production—whether it be another organization, a customer, or in some cases our company.

For more details, see “What Are Renewable Energy Certificates (RECs)?”

For each ton of carbon emitted in our 2015 carbon footprint, the clean energy systems that we have deployed avoided more than 3 tons.

In 2015, our deployed solar systems generated over 1.7 billion kilowatt-hours of electricity. The US Environmental Protection Agency **indicates** that a commensurate reduction of grid electricity consumption avoids 1,179,227 metric tons of CO₂ (**see Appendix A**).

Our 2015 carbon footprint of 356,130 metric tons of CO₂ pales in comparison to the 1,179,227 metric tons of CO₂ avoided by systems that we deployed. For each ton of carbon emitted in our 2015 carbon footprint, the clean energy systems that we have deployed avoided more than 3 tons.

Deducting our internal company footprint of 356,130 metric tons leaves a balance of 823,097 metric tons avoided (Chart 1.2). This amount of avoided carbon emissions is **equivalent** to taking over 173,000 cars off the road for a full year, or taking 113,000 homes entirely off the electric grid for a full year.

LIFECYCLE ANALYSIS AND CARBON PAYBACK OF A TYPICAL SOLARCITY POWER SYSTEM

Although our overall carbon impact is clearly beneficial, it remains true that every installed solar system carries an intrinsic carbon footprint—in large part due to the manufacturing of solar panels. Prospective solar customers and the public are instinctively wise to inquire

about the lifecycle carbon impact of going solar. The natural question becomes: what is the “carbon payback” of a solar system? In other words, for how long must a customer use clean electricity from a solar system (in lieu of consuming electricity exclusively from the grid) to make up for the carbon footprint associated with their system?

Our analysis suggests that the carbon payback time of a given system installed by SolarCity is remarkably short, even when taking into account the lifecycle carbon emissions of the system.

In calculating the carbon payback of a typical system installed by SolarCity, we broaden our analysis to account for other stages in the solar system lifecycle. In addition to considering the carbon footprint of manufacturing (as we did above), here we also attempt to incorporate raw material extraction, transport to manufacturing facilities, shipping to operation centers, and disposal of a solar system after its expected 30-year lifetime.

We base our lifecycle carbon calculation on results from one of our main suppliers of solar panels in 2014 and 2015, Trina Solar, based in China. While all suppliers are different, we assumed for this calculation that Trina’s lifecycle data can reasonably be applied to all panels. We justify this assumption based on two

key factors: first, among our suppliers, Trina has provided good, up-to-date data about lifecycle carbon emissions; second, Trina was one of our top three suppliers in 2015. Moving forward, more of our solar panels are being sourced from Singapore and Mexico, and increasingly will be made in the United States (at our Fremont and anticipated Buffalo manufacturing facilities).

According to Trina’s biannual carbon footprint **analysis** (2014), which is based on detailed specifications published by the British Standards Institution, the lifecycle carbon emissions of a solar module from raw material extraction, production, and transport to manufacturing is 678.73 kg CO₂e/kW. Adding in SolarCity’s carbon emissions detailed in Table 1.2, as well as incremental adjustments for shipping and end-of life disposal, we calculate that a SolarCity system’s lifecycle carbon footprint may reach as high as 949 metric tons of CO₂ per MW (**see Appendix A**).

Even in this high scenario, the carbon payback of a typical SolarCity system (6 kW rooftop system) is less than one year. The actual carbon payback may be faster, since our analysis makes the undeservedly forgiving assumption that fossil-fueled power generation has zero lifecycle emissions other than smokestack pollution. We know this is to be false based on overwhelming evidence of fossil fuels’ broader carbon footprint—including **energy-intensive drilling, catastrophic**

CHART 1.2
A broader perspective:
Systems deployed by SolarCity helped avoid more than 800,000 net metric tons of CO₂ pollution in 2015

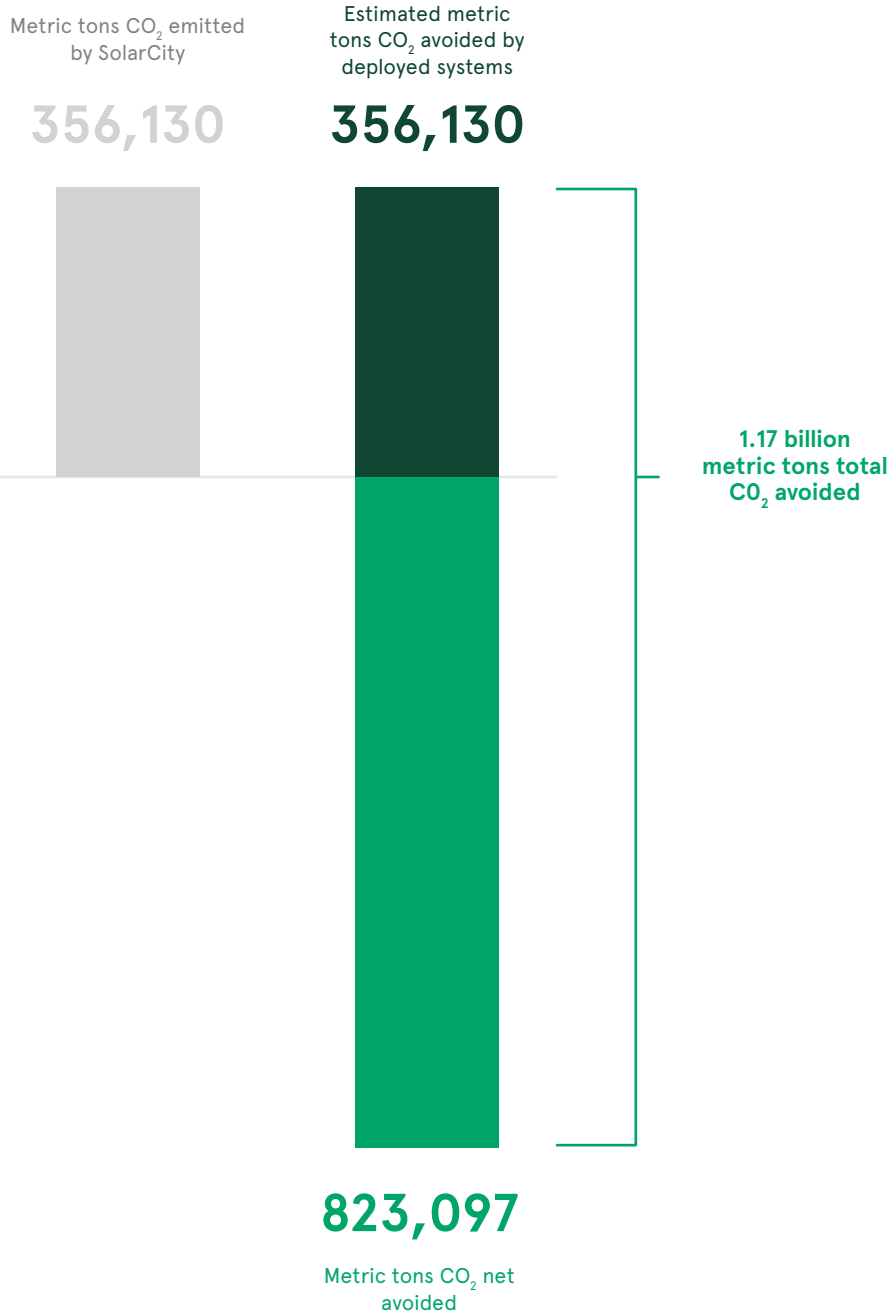
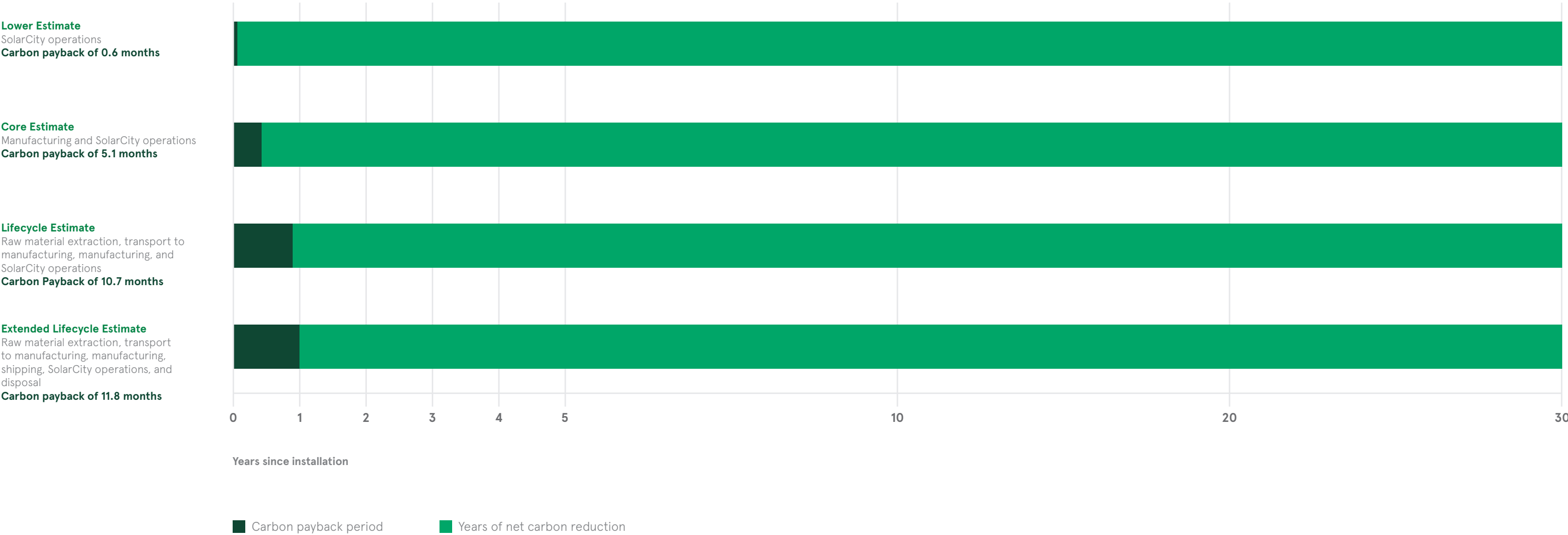


CHART 1.3

Carbon payback of typical
6kW SolarCity rooftop system

The typical SolarCity system starts delivering
net carbon reductions in less than 1 year



natural gas leakage, long-distance fuel transport, material-intensive building of pipelines, power plant construction, and sprawling grid infrastructure.

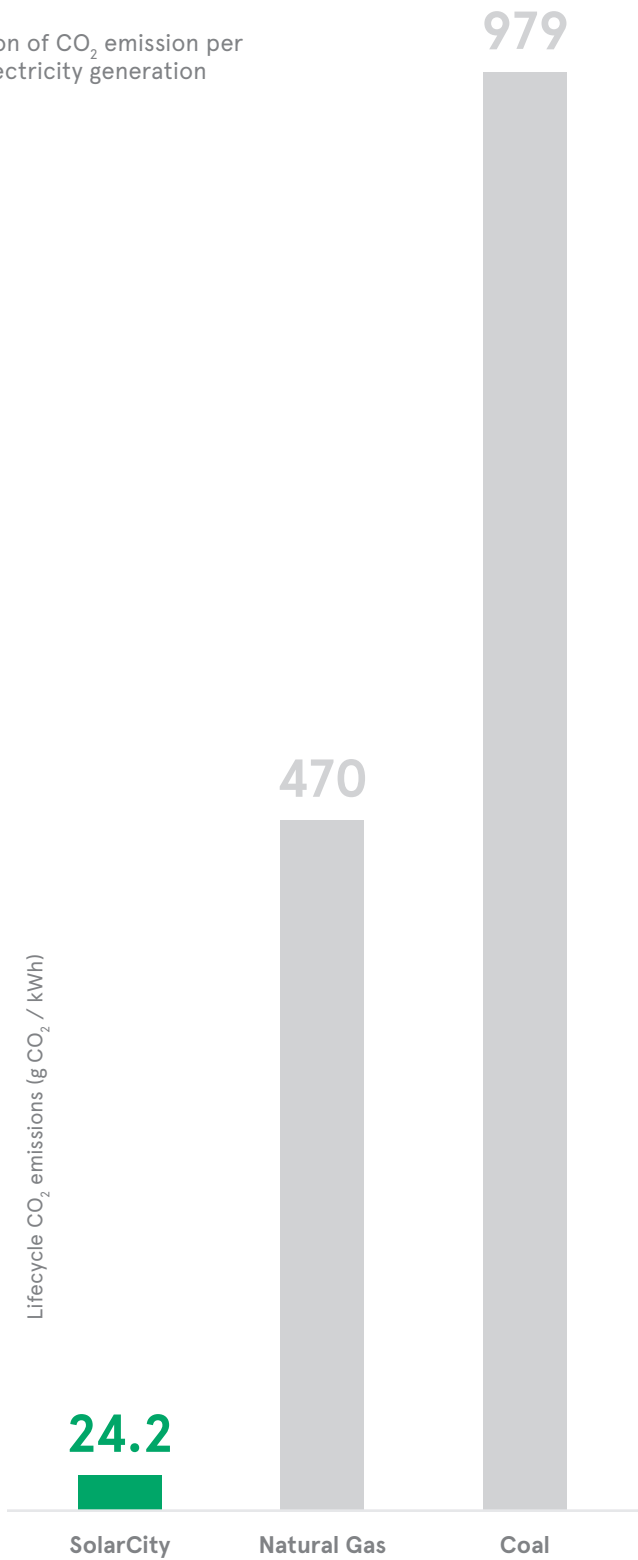
As mentioned, Chart 1.3 imputes lifecycle emissions to solar power, but conservatively assumes that conventional power grid sources have no carbon footprint beyond smokestack emissions. In order to create an apples-to-apples comparison, we can take the SolarCity lifecycle carbon footprint statistics used for Chart 1.3, and directly compare them to the lifecycle carbon footprint of conventional electricity sources.

In particular, for different generation sources (e.g. solar, natural gas power plant, coal power plant), we can compare the average lifecycle CO₂ emission associated with each kilowatt-hour generated from the source during its lifetime. For a SolarCity installed system, we use the “Extended Lifecycle Estimate” for its carbon footprint (see Chart 1.4 and [Appendix A](#)). Comparing that to the per-kWh carbon footprint of other generation sources ([calculated by the National Renewable Energy Laboratory](#)), SolarCity systems clearly deliver electricity with minimal carbon pollution—vastly less than fossil-fuel power plants.

Given the low greenhouse gas emissions from solar power, increasing its adoption is an essential strategy in efforts to combat climate change at an individual and national level. Chart 1.5 shows that installing rooftop solar can dramatically and immediately shrink a US home’s CO₂ footprint from electricity use, and puts this impact in the context of national climate policy goals. The [Clean Power Plan](#) (announced by President Obama and the EPA in August 2015) aims to, by the year 2030, reduce carbon pollution from the electric power sector to 32% below 2005 levels. Chart 1.5 suggests that SolarCity customers can reduce their electric-power carbon footprint at a scale and pace that is not only consistent with, but vastly accelerates the country’s attainment of Clean Power Plan goals.

CHART 1.4

Comparison of CO₂ emission per kWh of electricity generation

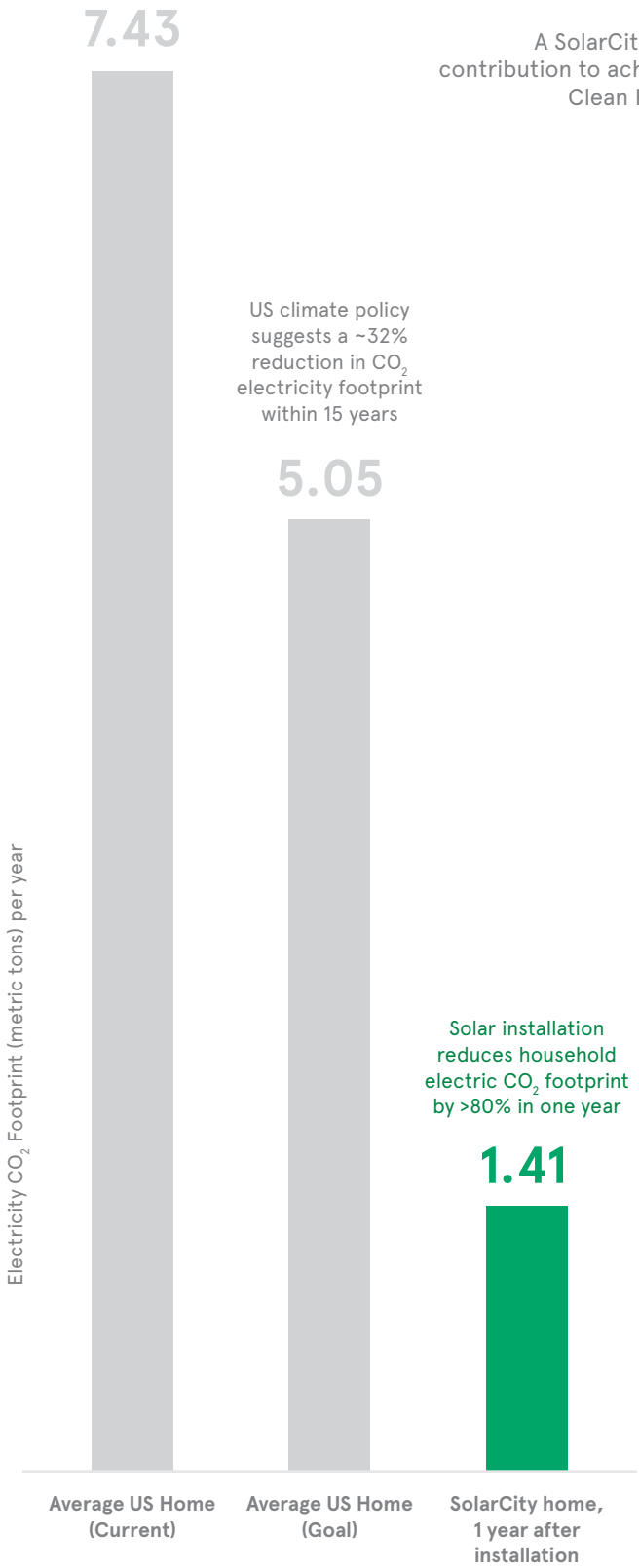


Lifecycle CO₂ emissions

Typical SolarCity solar system versus fossil-fuel generation technologies

CHART 1.5

A SolarCity rooftop’s contribution to achieving U.S. Clean Power Plan



Solar installations vastly accelerate U.S. progress toward combating climate change

A CLEANER, DISTRIBUTED ENERGY FUTURE: THE SMART ENERGY HOME

Beyond providing clean electricity, solar panels can play a central role in smart energy management that furthers lower a building’s carbon footprint. For instance, our Smart Energy Home offering in Hawaii uses an ensemble of advanced technologies: solar panels, battery storage, smart electric water heaters, and the Nest Learning Thermostat™—all coordinated by a home gateway that controls the battery, water heater, and inverter to maximize solar PV generation and on-site consumption.

SolarCity’s smart energy home management system for Hawaii combines solar with batteries to store excess electricity generated from the solar power system during the day, then delivers it to the home at night. The dynamically controlled smart electric water heater uses solar PV to heat water during the day and stores it for later use in the home.

Altogether, the Smart Energy Home uses the battery and smart electric water heater to automatically modify energy usage based on how much solar power is available, while the Nest Thermostat™ learns what temperature you like to help save on heating and cooling.

WHAT ARE RENEWABLE ENERGY CERTIFICATES (RECs)?

Renewable energy, such as solar, has two components that are valuable to society—the electricity itself and the environmental benefits.

To help account for the environmental benefits, when renewable energy facilities generate electricity, they receive Renewable Energy Credits, or “RECs.” One REC generally equates to 1 MWh of electricity, with the REC itself representing all the associated positive environmental attributes.

Owners of RECs can sell them to anyone who wants to claim those environmental benefits. In many states, laws called Renewable Portfolio Standards (RPS) require energy providers (such as utilities) to source a certain percentage of their power from renewables. They must demonstrate compliance with these laws each year by procuring and submitting RECs so that the state can track renewable energy generation and ensure achievement of established targets. As a result, there are active REC markets where renewable energy generators sell the RECs they receive to buyers who either must purchase them to meet legal requirements, or who are interested in buying RECs voluntarily on the basis of their environmental value.

SolarCity often assumes ownership of the RECs generated by our customers’ solar panels. This directly benefits customers by reducing the cost of their solar system and indirectly benefits their neighbors and community by reducing CO₂ emissions. While SolarCity assumes ownership of customers’ RECs for ease, in most areas we also offer customers the option to buy the RECs if they choose.

However, if a customer does not own the RECs, then that customer is not able to sell, use, or claim them; a third party may have the right to claim that it is using clean, green, or renewable energy based on the purchase of the RECs from a customer’s system. Regardless of whether a customer owns the RECs, the solar panels on their roof are producing clean energy.

For the purposes of this report, we have identified the carbon reductions and environmental benefits that originate from the systems we have installed. However, we cannot and do not necessarily claim legal ownership of those reductions or benefits. That ownership contractually resides with the party that owns the associated RECs— whether it be another organization, a customer, or in some cases our company.

We look forward to continue enabling the large-scale generation of RECs nationwide, as we; bring online more and more renewable power that benefits society and the planet.

LEARN MORE ABOUT HOW RECs WORK:

http://www.green-e.org/learn_re_claims.shtml

<https://www.epa.gov/greenpower/renewable-energy-certificates-recs>

<http://www.wri.org/publication/bottom-line-renewable-energy-certificates>

1B IMPACT ON AIR AND WATER RESOURCES

Clean energy sources offer additional benefits beyond reducing carbon pollution. They also decrease local air pollutants—such as nitrogen oxide and sulfur dioxide—that **contribute** to smog, haze, and a variety of health problems. The electricity sector is one of the **largest** industrial sources of air pollution in the U.S. Because solar power involves no combustion of fossil fuels, its deployment can drive a vast reduction in air pollution.

In 2015, solar systems deployed by SolarCity produced over 1.7 billion kilowatt-hours of electricity. According to our calculations based on data from the **EPA eGRID database**, our clean energy systems produced an amount of electricity, that if produced instead at a conventional power plant, would have released 2.38 million pounds of nitrogen oxide, 2.58 million pounds of ozone, and 5.82 million pounds of sulfur dioxide. **See Appendix A** for calculations.

Moreover, solar panels' lifecycle water use is a **small fraction** of the water use required to fuel and operate conventional power plants. For example, the U.S. Geological Survey **estimates** that the country's thermoelectric power plants are responsible for 161,000 million gallons of water withdrawals per day—amounting to 45 percent of the country's total water withdrawals, 38 percent of total freshwater withdrawals, and 51 percent of fresh surface-water withdrawals. On average in 2010 (the last year for which US Geological Survey **data** is available), 19 gallons were used on average to produce each kilowatt-hour of electricity at U.S. power plants. This pattern suggests that, in 2015, the solar systems deployed by SolarCity may have avoided more than 32 billion gallons of water use.

SOLAR POWER REDUCES AIR POLLUTION

In 2015, SolarCity's deployed solar systems produced over 1.7 billion kilowatt-hours of pollution-free energy. In comparison to conventional power plants, that much solar energy can make the following reductions possible:

Nitrogen Oxide (NOx)

2.38 million
pounds less

Ozone

2.58 million
pounds less

Sulfur Dioxide

5.82 million
pounds less

SOLAR POWER SAVES WATER

In 2015, solar energy systems deployed by SolarCity avoided more than **32 billion gallons of water use** at America's power plants.

Enough to fill 49,000 Olympic-sized pools.



Our company headquarters in San Mateo, California is topped with a **62-kilowatt solar panel array** that delivers approximately 10% of the building's energy needs on a typical workday.

Section

1C

USING CLEAN POWER, MAXIMIZING EFFICIENCY, MINIMIZING WASTE

Our reduction in carbon intensity from 2014 to 2015 reflects an ongoing focus on ways we can be a better, greener company.

USING CLEAN POWER

First, we obviously believe in the value of using clean energy ourselves. Our company headquarters in San Mateo, California is topped with a 62-kilowatt solar panel array that delivers approximately 10% of the building's energy needs on a typical workday.

Likewise, our Zep Solar division in San Rafael, CA and our Silevo division in Fremont, CA both are equipped with rooftop solar.

In addition, our decision to site our first large-scale manufacturing facility in Western New York was strategically driven by its proximity to abundant non-polluting hydropower resources. This locational choice will help us limit the carbon footprint of our manufacturing for years to come. See Section 1D for further details about our manufacturing-related sustainability practices.

Adopting cleaner energy sources also plays a role in our transportation initiatives. At our facilities in San Mateo and Fremont, we provide chargers for electric cars.

MAXIMIZING EFFICIENCY

An overarching commitment to resource efficiency spans our entire business. The solar panels we manufacture in the United States have tested to be among the **most efficient** rooftop solar panels. But we can't stop there. Across the board, we strive to design all our processes and logistics in intelligent ways that make the most of company resources and the planet's resources.

As a vertically integrated provider, a paramount area for efficiency is our delivery and installation of solar projects. One of our most successful efficiency initiatives in recent years has been optimizing vehicle types and usage within our installation fleet. In late 2013, we sought to increase vehicle productivity and cut emissions by adopting a greater share of large box trucks and reducing our reliance on sprinter vehicles.

Since a single box truck can effectively do the job of two sprinter vehicles, our increased deployment of box trucks has allowed us to maintain an installation fleet that currently consists of around 850 vehicles (a combination of box trucks and sprinters), rather than 1,100 vehicles (a scenario with only sprinter vehicles). As a result of this approach,

we phased out 207 sprinter vehicles from our installation fleet.

At the same time, the productivity of our overall field operations has improved, which further decreases emissions. In spring 2013, an average SolarCity installation crew could complete one residential installation over the course of 2-3 days; in comparison, today the typical crew can complete more than 1 installation per day. Finishing an installation in a single day avoids return trips to the same customer site, which reduces driving miles and emissions.

MINIMIZING WASTE

We are committed to minimizing waste in our operations wherever possible. Our first priority is always to avoid generating waste, and when we cannot, we aspire to adopt effective recycling practices. Here we describe a range of waste reduction and waste management initiatives related to our products and facilities.

Offices and operation centers:

- We recycle, repurpose, or reuse excess materials such as paper, toners, aluminum, cardboard, and plastic by providing centralized recycling bins in corporate offices, and contracting with electronics recycling companies for IT waste.
- We predominantly use digital sales collateral to save paper.
- We have installed motion sensor lights and waterless urinals at our new corporate buildings; our janitorial staff uses green cleaning agents across our sites.
- We employ dedicated facilities managers to maintain interior temperature settings that intelligently optimize for energy savings and comfort.
- We conduct regular energy audits of our offices and warehouses to identify opportunities for decreasing electricity and gas consumption.



SolarCity's Earth Team

SolarCity launched its Earth Team in 2010 on Earth Day, with the mission to find opportunities to influence workplace actions that decrease the impact of global climate change and provide environmental education for employees. Since the beginning, Earth Team has emerged as a valuable forum for employees to educate each other about various sustainability topics. Earth Team members across the company participate in local volunteer events, host speakers, share resources, and promote other environmentally friendly events like energy conservation competitions and Bike to Work Day.



Zep mounting hardware:

Our Zep mounting hardware is designed so that solar panel technology neatly snaps together, thereby eliminating the needs for rails, clips, and all the material that goes into making them. Fewer components for each system means radically less waste.

In addition, the majority of Zep hardware is made with recycled materials. As a result, recycled materials are found in every new SolarCity installation.

Recycling solar panels:

Solar panels have an estimated lifespan of 30 to 40 years before requiring disposal. There are numerous examples of systems installed even more than 40 years ago that are still operating today. As solar technology has improved significantly over the years, the useful life of systems installed today may well exceed 40 years.

While there are very few panels that need disposal, we recycle the ones that do. Mechanical shredding and electronic separation technology is used to process the solar panels into homogeneous glass and aluminum material streams, which are then recycled. Our current recycler has a zero-landfill policy for solar products, ensuring that 100% of the material generated by the process is recycled.

CORE ZEP HARDWARE COMPONENTS



Leveling Foot



Interlock



Ground Zep



Combiner box



DC Wire Grip



Grip



End Cap



Array Skirt



Tools



RESPONSIBLE MANUFACTURING

In 2014, SolarCity acquired Silevo, a solar technology and manufacturing company. To scale up our operations, SolarCity is, for its first time, developing large-scale manufacturing facilities for its proprietary products—a new and exciting phase of our business. Our intent is to produce world-class solar panels at minimal environmental cost.

At this early stage of our manufacturing operations, we have begun to incorporate sustainability principles in the following areas; we are currently exploring other strategies to ensure that we are a global leader on environmental stewardship.

Clean power supply: We made the decision to site our first large-scale manufacturing facility (Riverbend) in Western New York because of its proximity to abundant non-polluting hydropower resources. This locational choice will help us limit the carbon footprint of our manufacturing for years to come. We are also actively exploring the feasibility of installing on-site solar power on our new facilities.

Water Resources: SolarCity seeks to promote water stewardship consistent with the wellbeing of all watersheds, ecosystems, and local communities. In particular, we are dedicated to making our activities at the Riverbend manufacturing facility supportive of the comprehensive cleanup and transformation of the Buffalo River, and to ensure the waterway remains a rich environmental, economic, and community resource. Our Riverbend facility is targeting to recycle 70% of water used in the manufacturing process.

Resource efficiency: Our proprietary Triex solar cell technology uses an integrated six-step core process that is designed not only to enable cost-effective high-volume manufacturing, but also to reduce waste and optimize raw material usage. In addition, our manufacturing facilities are in the process of identifying reclaim opportunities for manufacturing waste materials.

For our new modules, we are exploring novel sustainable packaging options—such as reusable protective plastic corners—that don't rely on each module being individually packaged in cardboard. Such solutions can significantly reduce the volume of waste from our operations. Using reusable protective plastic corners in lieu of cardboard packaging, for example, can cut the volume of packaging waste by approximately one third.

Building efficiency: In developing our new facilities, we are exploring opportunities for the adoption of structural, process-based, and behavioral energy efficiency measures that help us further reduce our carbon footprint.

Brownfield development: Our Riverbend manufacturing facility is located on a reclaimed Republic Steel brownfield site. SolarCity strongly supports brownfield redevelopment—for manufacturing as well as the siting of solar installation projects—as a means to restore environmentally impacted properties, mitigate future environmental impacts, provide jobs, and revitalize the social foundation of communities.





Section

1E ADOPTING A SUPPLIER CODE OF CONDUCT

In 2015, SolarCity developed and adopted a Global Supplier Code of Conduct that clarifies our global expectations in the areas of business integrity, labor practices, health and safety, and environmental management. SolarCity's suppliers are required to provide safe working conditions, treat workers with dignity and respect, act fairly and ethically, and use environmentally responsible practices wherever they make products or perform services for SolarCity.

SolarCity requires its suppliers to operate in accordance with the principles set forth in our Supplier Code and to conduct business in full compliance with all applicable laws and regulations.

We intend to strengthen our Supplier Code as needed, especially as our operations take on greater scope as a manufacturer.

Section 2

CREATING A SAFE, HEALTHY, AND INCLUSIVE WORKPLACE

We want to build one of the best teams on the planet. We look after the safety and health of our employees, and strive to make our workplace a diverse and inclusive one where employees can grow and flourish.





Section **2A** ENVIRONMENTAL HEALTH AND SAFETY

OUR CULTURE OF SAFETY

We are committed to being the safest solar company in the world. That means exceeding regulatory requirements, pioneering industry best practices, and assuming a leadership position in our industry. Keeping our employees safe is our number-one operational priority.

Our procedures and policies often go above and beyond the minimum regulations set forth in Cal/OSHA, FedOSHA, NFPA, EM385, and other safety regulations to protect our workers and customers.

RIGOROUS SAFETY TRAINING

From their first day of work at our Regional Training Centers, and over the course of their first year, we provide all new field employees with approximately 50 hours of classroom and e-learning safety instruction, specific to the work they perform. SolarCity University, our online training platform for employees, offers more than 30 safety-specific training modules complete with testing to ensure a comprehensive understanding of the subject matter. In addition to classroom and e-learning instruction, employees receive many hours of on-the-job training from dedicated crew leads.

To reinforce our single-minded safety culture, we hold weekly safety meetings in all installation offices and organize

an annual Safety Week. Our installers, site surveyors, and operations and maintenance teams routinely increase awareness and focus on best practices across key risk areas, including fall protection, motor vehicle operation, electrical work, and ladder safety.

SAFETY INNOVATIONS

We use the most up-to-date safety equipment from leading manufacturers. All hardware is properly rated for its application according to OSHA and ANSI standards.

We have also introduced our own proprietary products, designed by our in-house team of engineers, to optimize safety and provide a top-quality user experience. These products include:

Material Hoist: A mechanized tool carriage capable of moving typical installation materials, including solar panels, from the ground to the rooftop with less physical effort. The Material Hoist aids installers in safely and efficiently hoisting materials to the roof and avoids sprains and strains that could be caused by this common material handling issue.

Ascent Tool: A simple hand tool that allows an installer to hoist or lower a single solar panel safely and efficiently. Used in conjunction with the Material Hoist, the Ascent Tool allows for flexibility and

convenience, especially on complicated projects with limited access to array mounting planes.

ZS beam: This technology uses a patented clamp to lock panels onto carport or canopy structures. While previous carport installation approaches often required installers to stand on top of a support structure or forklift to lock panels in place, ZS Beam is designed to be installed from below and employs a unique grounding and bonding feature, resulting in one of the safest and most efficient ways to install solar support structures today.

OUR SAFETY RECORD

Our record on safety continues to achieve high marks, exceeding the performance of comparable industries (see Table 2.1).

Another key metric related to our safety performance is the Experience Modification Rate that insurance companies use to gauge the probability of incident. A lower rate indicates a lower risk profile (and thus lower insurance premiums). Compared to an **industry average level of 1.0**, SolarCity’s Experience Modification Rate in 2015 was 0.70, which represents a progressive improvement from 2014 (0.79) and 2013 (0.87).

INDUSTRY LEADERSHIP ON SAFETY

We work with leading organizations including the California Solar Energy Industry Association, North American Board of Certified Energy, and U.S. Department of Energy, to share best practices and educate our peers. We have authored safety articles in leading publications, created training programs, represented our industry in regulatory forums, and are working with hardware manufacturers to develop new products to improve installation safety.

TABLE 2.1

SolarCity safety performance, compared to industry averages (2015)

	Total Recordable Injury Rate	Lost Time Rate
Roofing Contractors	5.3	2.3
National*	3.2	1.0
Electrical Contractors	3.0	1.0
Electric Power Generation, Transmission, and Distribution*	2.1	0.6
SolarCity	1.96	0.38

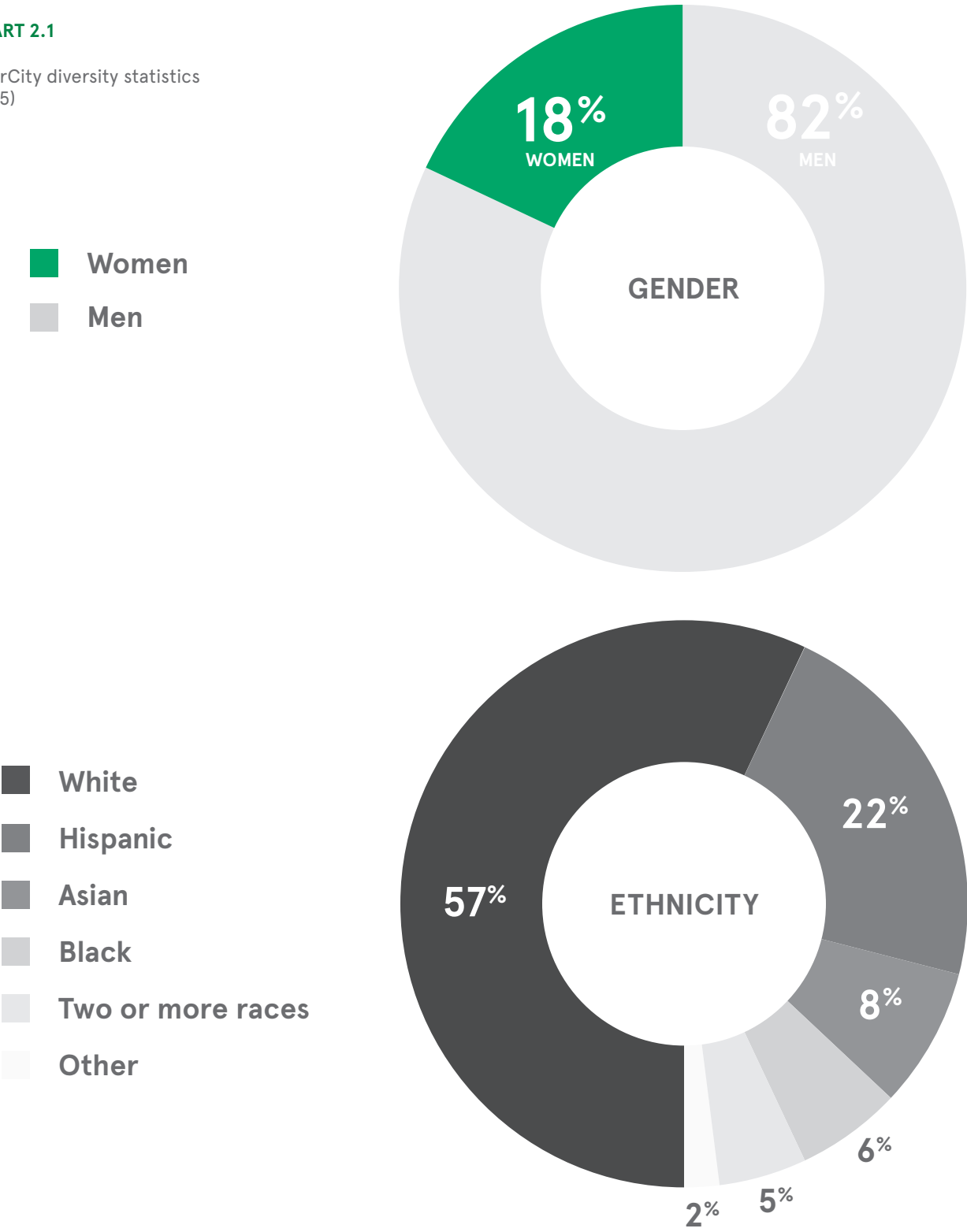
* Private industry
Most recent available data for industry safety rates is from 2014 and is reported by the **US Bureau of labor statistics**

“We firmly believe that safety incidents can be prevented and that a zero-injury workplace is achievable. Our safety success is a testament to the dedication of our leadership and the commitment of our employees to creating a safe work environment.”

Carlos Ramirez, Vice President of Environmental Health and Safety

SolarCity Workforce in 2015

CHART 2.1
SolarCity diversity statistics
(2015)



Section

2B DIVERSITY AND INCLUSION

We believe it is important to have a diverse workforce that reflects the communities we serve. As we grow, diversity is particularly important for our global competitiveness and effort to foster a vibrant employee culture.

Chart 2.1 summarizes the distribution of ethnic and gender diversity at SolarCity, followed by a discussion of goals and initiatives.

DIVERSITY METRICS AND INITIATIVES

SolarCity’s long-term growth and success depend on our ability to integrate diversity and inclusion into everything we do—driving innovation and enabling us to meet the needs of our customers and communities.

We advance diversity and social inclusion by working to ensure that every SolarCity teammate feels valued and respected, and has equal access to all opportunities and resources to thrive.

In every department, we seek to develop a workforce that represents the available talent pool. Where the talent pool does not reflect the diversity of the local community, we actively work to increase talent pool diversity through training programs and strategic efforts to reach out to qualified candidates.

SolarCity’s workforce is 43% ethnically or racially diverse and 18% women. Historically, women have not composed a large part of our industry’s talent pool. We want to be a leader in changing that, as well as in achieving high rates of

diversity at every level—from entry-level teammates to senior management. We are taking a range of steps to cultivate diversity across our company.

These steps include:

- Hiring a full-time Head of Diversity and Inclusion in 2015.
- Creating company-wide and location-specific Affirmative Action plans to address imbalances through hiring and promotion.
- Creating employee resource groups (ERGs)—voluntary communities led by fellow employees that encourage peers to share ideas, build relationships, and take advantage of mentorship opportunities.
- Adopting the “Rooney Rule” to promote the interviewing of minority candidates for senior management positions.
- Establishing a voluntary mentorship program to help employees develop and grow within the company.
- Forming a diversity council, sponsored by the CEO, comprising leaders throughout the company who meet regularly to discuss diversity issues within the organization.
- Participating in job fairs and recruiting events with diverse community groups from around the country.

THE ROONEY RULE

SolarCity is implementing a similar approach to the National Football League’s “Rooney Rule,” to cultivate greater diversity in our workforce.

The “Rooney Rule” requires NFL teams to interview minority candidates for head coaching and senior football operations jobs. The rule does not mandate a hiring quota nor is preference given to minorities in the hiring process. The rule has been successful in increasing diversity: since it was implemented in 2003, the NFL has seen a significant rise in the number of open positions filed by minority candidates.

SolarCity will continue to diversify our candidate pools. We aim to present hiring managers with at least one qualified candidate who is a member of an underrepresented group. This effort is initially focused on senior management positions. In addition, we have begun to amplify our interview and diversity training for managers across the board.

We regularly monitor our progress toward becoming a more vibrantly diverse company.



IMPROVING OUR GENDER DIVERSITY: WOMEN IN POWER

To accelerate our efforts on gender diversity, we recently launched our Women in Power initiative. Our goal is to inspire and amplify the voices of SolarCity’s women by sponsoring, promoting, and connecting them through an employee resource group.

To fulfill Women in Power’s mission, the company has created six volunteer sub-committees that help the group flourish across a range of areas: networking and events, mentorship, employee recruiting, resource development, a speakers bureau, and membership services.

We are involved in industry efforts to encourage the participation of women in the energy sector, including TechWomen and the Corporate Women’s Initiative Consortium of Silicon Valley. The latter is designed for leaders of women’s initiatives inside 40+ companies to share best practices and lessons learned.

We sponsor several conferences and events to attract more women into the field. In recent years, these have included the Haas Women in Leadership Conference, a quarterly career event at Hackbrite Academy, C3E Women in Clean Energy Symposium, and the New England Women in Energy and the Environment Awards Gala.

SUPPORTING TECHWOMEN

SolarCity is a proud multi-year sponsor of TechWomen—a program hosted by the U.S. State Department that empowers, connects, and supports the next generation of women leaders from the Middle East, Central Asia, and Africa who work in STEM (Science, Technology, Engineering, and Mathematics) disciplines. They are selected to work with companies in the U.S. for a month with host companies such as SolarCity. In recent years, we have hosted and mentored Emerging Leaders from

Nigeria, Zimbabwe, Turkmenistan, Sierra Leone, Lebanon, Cameroon, and Tunisia.

We are thrilled to welcome TechWomen from around the globe. As part of their work with us, they have partnered closely with their mentors to design meaningful projects, received professional guidance to support their goals, and participated in a variety of seminars, workshops, and networking events.

PROUD TO SUPPORT VETERANS

Project SolarStrong™ is our partnership with the U.S. military to build solar power projects for U.S. military housing communities across the country. Our goal is to provide solar power to up to 120,000 military housing units.

As part of the project, we have partnered with the country’s leading military housing developers to install, own, and operate rooftop solar installations and provide solar electricity at lower cost than utility power. SolarStrong enables developers to save money on energy costs, which can be reallocated toward quality-of-life improvements and enhanced services for military families.

The SolarStrong initiative has meant new hiring for SolarCity—with a particular emphasis on veterans. SolarCity is a Military Friendly® Employer and proud to employ more than 700 veterans. As a founding recruiting partner of the U.S. Department of Energy’s Solar Ready Vets program, SolarCity provides accelerated training to help place transitioning veterans into the solar industry. We are committed to hiring veterans because their skills, attitude, and character are a great fit for our mission to transform energy delivery for the 21st century. SolarCity also recently participated in the Joining Forces 5th Anniversary events at the White House, where we made commitments to hire or train veterans or military spouses over the next 5 years as part of the Joining Forces Initiative.

DEVELOPING OUR PEOPLE

We are dedicated to supporting all our employees to expand their skills and knowledge so they can advance in their careers and communities.

We provide a range of training programs for new and long-time employees—from field energy consultants to regional operations managers. Our programs span many formats that include workshops, field training, and e-learning. In 2013, we launched a comprehensive online training portal, SolarCity University, to expand the ease and breadth of training for all employees.

In addition to helping employees strengthen their expertise on specific skills, we prioritize training in leadership and management—so that employees can rise in their careers at SolarCity and beyond.

It is also important to us that our employees are able to balance work and personal responsibilities. We provide employees with a 24-hour employee assistance program called Care 24, whether or not they are enrolled in our medical benefits plan. This is a free resource for health information and support services, including mental health and financial guidance.

LISTENING TO OUR EMPLOYEES

We believe in regular and transparent communication with employees. We encourage SolarCity employees to share their feedback openly (and anonymously if they prefer), and the company provides easy methods to do so.

We have a whistle blower hotline through which employees can report concerns at any time. The company keeps information reported by employees in confidence, whether through the hotline or another channel. Our policies prohibit retaliatory

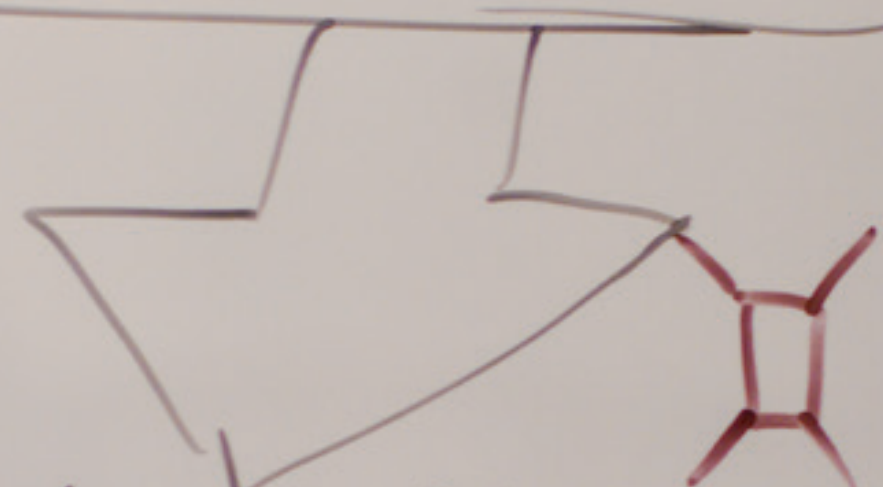
actions against employees for raising concerns or making complaints. We are committed to maintaining an open and transparent culture where it is safe and acceptable for all employees to raise concerns about policy violations by their managers or colleagues, or about the workplace overall.

We regularly conduct employee surveys to identify opportunities for improvement. As a result of recent feedback, we have invested additional resources in our SolarCity University and leadership training. We also established new opportunities to help employees connect with colleagues from different departments.

“At SolarCity we have a saying: One Team, One Dream. That’s identical to how we operate in the military, we look out for each other.... I put on my green SolarCity shirt, and I have as much pride as wearing my camouflage I’m all about solar.”

Frank Sandoval, SolarCity Senior Inspections Coordinator and a 12-year veteran of the US military

today's smart
market



MARK FOR

WHAT TAKE

Section 3

BEYOND THE ROOFTOP: JOBS, AFFORDABILITY, AND ACCESS

Section

3A JOB CREATION AND AN ECONOMIC ENGINE

Our company's core mission—to accelerate the deployment of clean and affordable energy—has proven to be a major catalyst for economic development and job creation. The 2015 Solar **Jobs Census** finds that the solar industry is an enormous job creator—adding workers at a rate nearly 12 times faster than the overall economy and accounting for 1.2% of all jobs created (equivalent to 1 out of 83 new jobs) in the U.S. between November 2014 and November 2015. Last year, which brought the count of solar employees to 209,000 nationwide, was the third consecutive year in which solar employment grew by roughly 20%.

Job opportunities in solar are substantially outpacing those in the fossil fuel industry. According to the 2015 Solar Jobs Census, the U.S. solar installation sector employs 77% more people than the domestic coal mining industry. And since 2014, solar installation “has created more jobs than oil and gas pipeline construction and crude petroleum and natural gas extraction combined.”

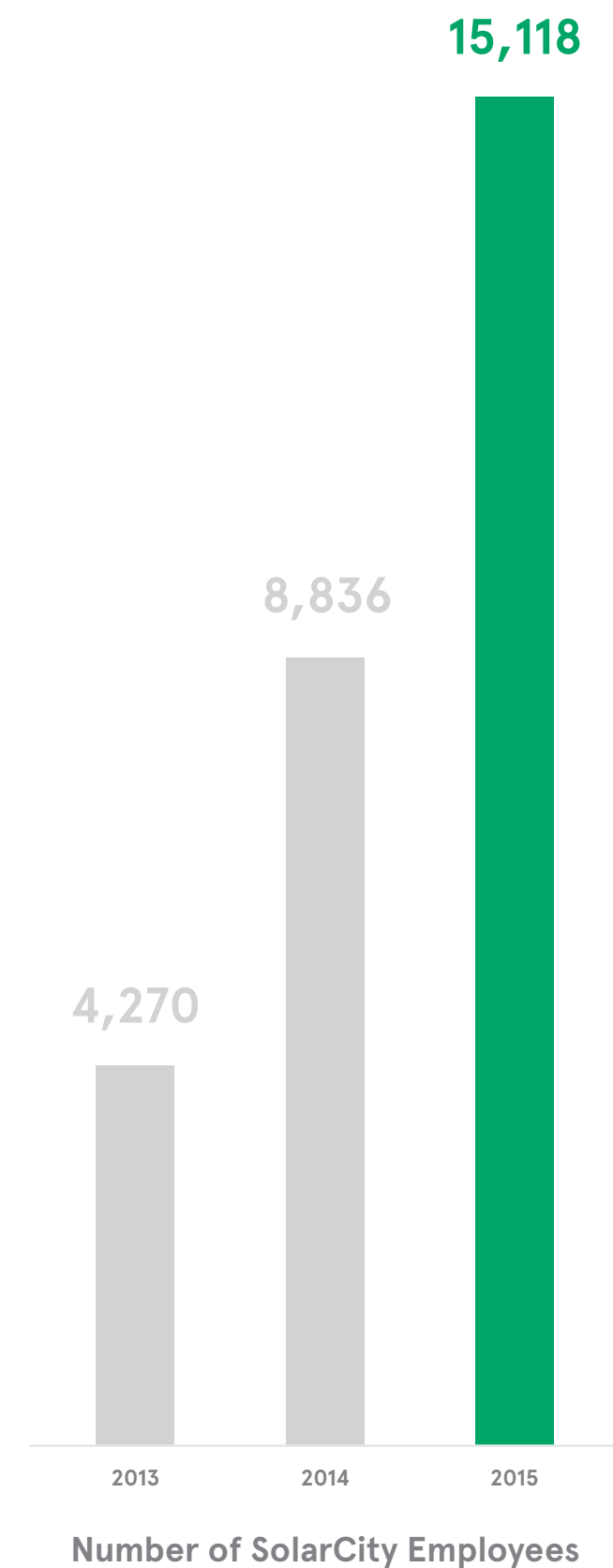
The U.S. solar installation sector employs 77% more people than the domestic coal mining industry

As the nation's leading solar installer, SolarCity has been at the forefront of adding jobs across all business categories, including highly skilled engineers, salespeople, marketing professionals, and installers. Chart 3.1 shows that between the end of 2013 and end of 2015, our total employment jumped 254% to more than 15,000.

We expect to create additional jobs from a new source as well—our currently under-construction solar panel manufacturing plant, which is expected to bring hundreds of clean energy jobs and broader economic stimulus to the Buffalo, New York area. SolarCity anticipates employing 5,000 people in New York State by the tenth anniversary of our new manufacturing facility.

CHART 3.1

Number of SolarCity Employees



3B MAKING CLEAN ENERGY AFFORDABLE AND ACCESSIBLE

We aspire to make clean and affordable energy available to everyone. We are taking action to help achieve this goal in multiple ways.

DRIVING DOWN THE COST OF SOLAR FOR CONSUMERS

Making solar a mainstream energy source naturally drives down its costs—thanks to factors such as technological improvements, economies of scale, and a range of attractive financing options. As the nation's leading solar provider, we play a key role in making solar widely available and affordable. Our innovative offering of solar leases, solar loans, and power purchase agreements has contributed significantly to the accessibility of solar to homes and businesses in the US.

Charts 3.2 and 3.3 show that as our scale of deployment has increased, our cost of installing solar has decreased. This pattern is a major factor in making solar increasingly accessible to consumers year after year, so that more and more families and businesses can start saving on their energy bills.

ENABLING COMMUNITY-SCALE SOLAR

Since every customer may not have a suitable rooftop or property to install a solar power system, we recognize and embrace the importance of approaches like community solar—which affords any person the opportunity to invest in and benefit from a shared solar power facility.

Motivated by a growing interest in community solar, SolarCity announced in June 2015 that we would work with Sunrise Energy Ventures in Minnesota to build a large community solar project that would offer solar energy to local renters, low-income housing residents, schools, and others in the Minneapolis-St. Paul area. Community solar allows customers to pay a lower rate for locally generated solar power, even if they do not have a rooftop appropriate for solar panels.

SOLAR FOR AFFORDABLE HOUSING

To help make the benefits of solar power more accessible to all populations, SolarCity announced in September 2015 a new solar service for affordable housing communities.

The new offering makes it possible for families in affordable housing to pay less for solar electricity than they currently pay for utility power. SolarCity will finance and install solar power systems on rooftops and carports of affordable housing communities, and the electricity generated by the systems can be distributed among common areas and individual housing units. Residents receive credits on their utility bills based on the amount of solar electricity allocated to their units, made possible by a policy called **virtual net metering**.

SolarCity also makes it possible for single-family homebuilders to install affordable solar power on new homes before the owners even move in. Builders offer solar

CHART 3.2

Cumulative MW installed by SolarCity

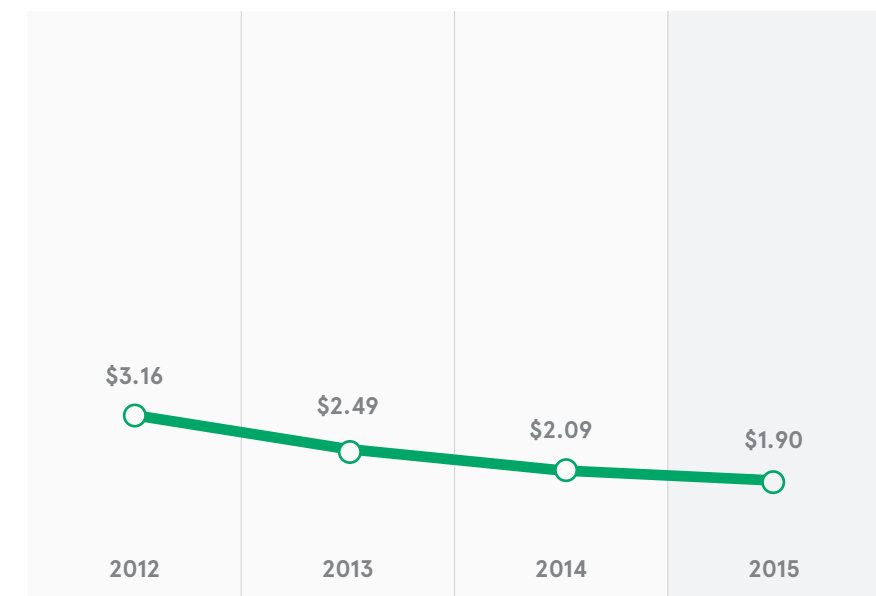
Cumulative MW Installed



CHART 3.3

Decreasing SolarCity installation costs

Installation Cost (\$/watt)



systems to residents—without delaying construction timelines or adding to the purchase price of the home—while new homeowners can save money from day one. SolarCity recently worked with [Habitat for Humanity of San Fernando/Santa Clarita Valleys](#) to provide affordable solar power on 78 new homes for returning U.S. veterans.

We continue to focus on expanding the accessibility of solar to all communities, helping create local installation jobs in low-income communities, and ensuring that more and more families benefit from clean, healthier sources of energy.

PROTECTING CONSUMERS

SolarCity's senior legal leadership proactively partners with the Solar Energy Industries Association and other solar providers to be on the forefront of consumer protection. Most recently, by helping establish an industry standard "Residential Lease Disclosure," we've ensured that consumers have access to full and transparent information about the terms and costs of solar leases, and we have made it simpler for them to compare competing providers.

The lease disclosure form is an important strategy to provide a clear snapshot of the key details of a leasing arrangement and to increase consumer awareness of aspects such as costs, warranty terms, and solar energy production estimates.

For more information about what SolarCity and the solar industry are doing to protect consumers, visit www.seia.org/policy/consumer-protection.



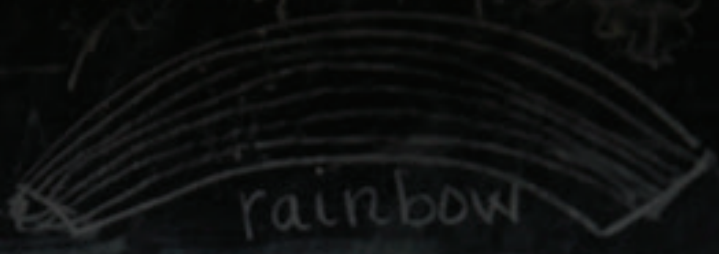
“There is a critical need to expand access to solar to communities that have not traditionally experienced as much growth as others. SolarCity should be commended for creating dedicated programs that target the hard to reach consumers while putting hard earned money back into the pockets of those who need it the most.”

California Assemblymember Susan Eggman (D-Stockton).



20-5-2015

SCIENCE
Weather



Rainbow has Seven colours.

Section 4



GIVEPOWER: POWERING COMMUNITIES, IMPROVING LIVES

The GivePower Foundation, a non-profit organization founded by SolarCity, has been a leader in energy access philanthropy since 2013.



More than 1 billion people globally do not have access to any electric power

More than 1 billion people globally do not have access to any electric power, billions more lack sufficient access to reliable electricity for a reasonable quality of life, and hundreds of millions of children attend primary schools without it. The full ramifications of having no electrical energy at a personal or community level is unimaginable for most of us in developed countries. A lack of power not only affects families on a personal basis, but also hampers the economic underpinnings and long-term capacity for self-improvement of communities and nations. As the largest residential and commercial solar energy provider in America, we wanted to address the significant populations that lack sufficient, affordable electricity.

GivePower uses clean energy technologies to deliver the most essential community services to the developing world—including education, water, health, food security, economic development, telecommunications, and conservation.

Founded on the principle that solar energy should benefit everyone, we started by providing lighting to one school for every megawatt SolarCity installed in the U.S. To date, GivePower has powered more than 1,500 schools in developing countries worldwide. Schools with electric power can attract superior teachers, increase the number and types of classes, and help students connect with the world. One of our largest program partners, buildOn, provides adult literacy classes and vocational training, while also rigorously measuring results to ensure that our school projects have maximum impact on local communities.

Our for-profit and non-profit partners—including **Off Grid Electric**, **d.Light**, **buildOn**, **Grid Alternatives**, and **Bank of America's charitable foundation**—have allowed us to reach far beyond where the power grid ends.

Beyond our school-focused work, we have expanded into larger solar projects that provide a range of fundamental community services to growing populations.

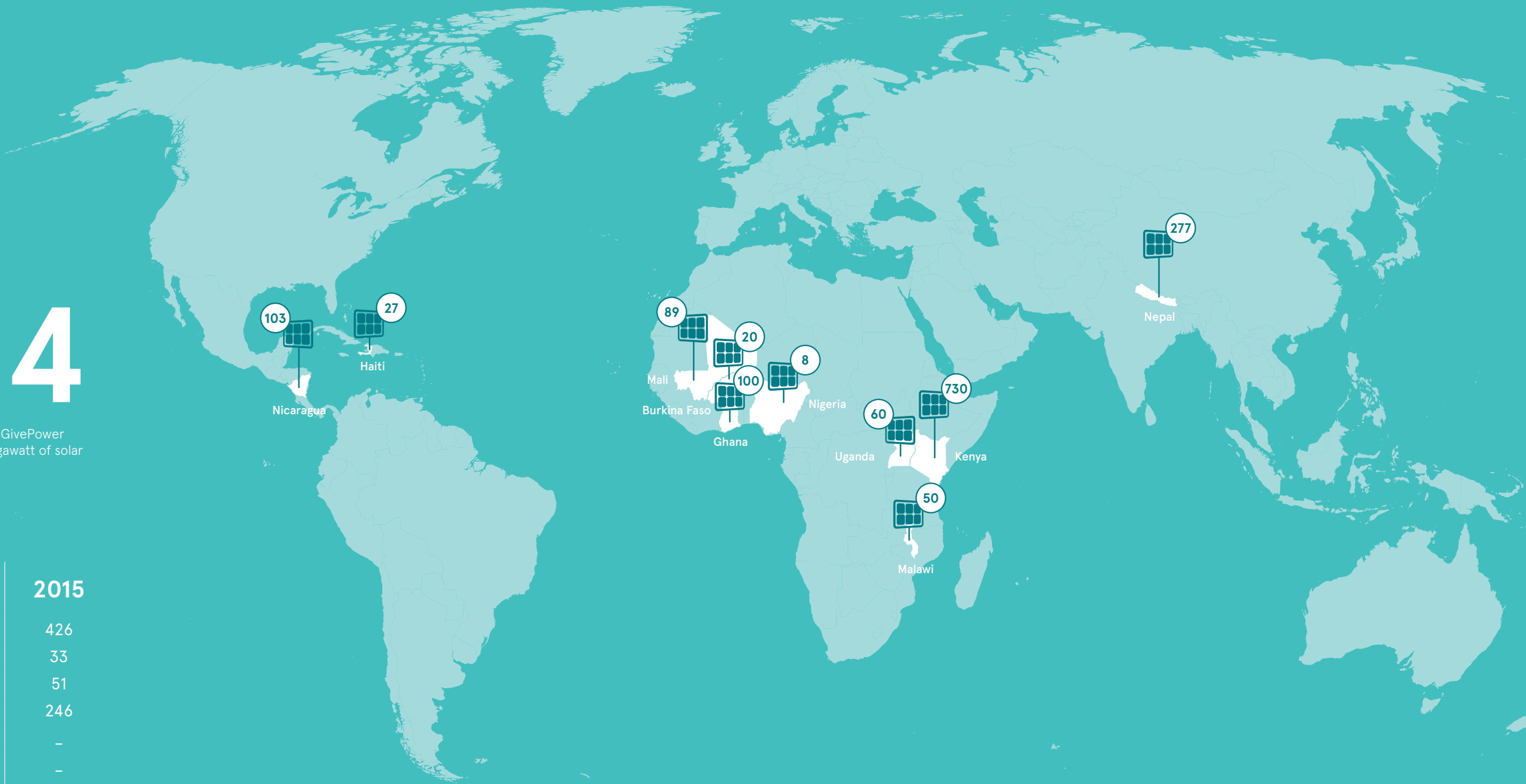
GivePower's Global Impact


SCHOOLS POWERED

1,514

Since 2014, SolarCity has funded a GivePower off-grid solar system for every megawatt of solar power installed in the U.S.

	2014	2015
Kenya	304	426
Mali	56	33
Nicaragua	52	51
Nepal	31	246
Uganda	60	–
Nigeria	8	–
Haiti	–	27
Ghana	–	100
Malawi	–	50
Burkina Faso	–	20





On all GivePower projects, we work closely with local installers, vendors, and community leaders. By cultivating local support, market development, and knowledge exchange, we help ensure each project will be successful in the long term.

GivePower also represents a unique opportunity for SolarCity employees to engage and grow. Through GivePower's volunteer trek program, we deploy crews of SolarCity electricians, installers, and a range of other trained employees to bring solar power to off-grid schools and communities. Employees are encouraged to get involved in fundraising, local volunteer efforts, and apply through a competitive application process that selects dozens of top-performing employees each year to help make GivePower projects a success.

Participating in GivePower projects allows employees to apply their skills in a challenging setting, make a meaningful

impact, learn through immersive cultural exchange, and forge closer bonds with colleagues.

OFF GRID ELECTRIC

SolarCity is proud to support Off Grid Electric (OGE), a company that provides the opportunity for customers in the developing world to transform their lives through modern electricity. Our CEO Lyndon Rive serves on OGE's board.

Access to clean energy provides a variety of benefits to developing-world households, including increased study time, opportunities for income generation, and more time for leisure activities. Avoided emissions from reduced kerosene use also lead to better environmental and health outcomes for all.

In addition to these benefits, over the next decade the renewable energy sector will become one of the largest

employers in Africa. OGE is leading the charge with over 1,000 full-time local Tanzanian staff to date. Already named one of the most exciting places to work in Africa, the company provides economic opportunity in a fast-paced startup environment to an eager and talented local workforce. The greatest impact, however, will be the realization of a sustainable energy future for the off-grid world.



WATER

Improving water access and natural resource management.

In rural Nicaragua, solar water pumps can provide water for reforestation. This is key in protecting the watershed, which can ensure that wells are continually replenished (and don't dry up) and reverse the damage done by erosion. Also, the water from the pumps can support sustainable organic food production by irrigating bio-intensive gardens.



FOOD

Increasing food supply and availability.

In remote islands of Indonesia, solar microgrids can improve island communities' main economies of fishing and rice production. They can power mills locally, so that small-holder farmers don't lose margins from moving grain between larger towns and the islands for processing. Solar microgrids can also refrigerate storage for fish to minimize food spoilage, ensuring that there is more food available for the community.



HEALTH

Better equipping health centers.

In many rural areas with low incomes, health facilities are often inadequate. Solar power can address many of these challenges, like the unavailability of doctors, deficient light for safe childbirth, and lack of refrigeration for vaccines. Solar can also provide a basic internet connection, connecting rural health centers to doctors in more populated areas.



EDUCATION

Advancing education with solar.

GivePower has installed solar systems in over 1,500 schools to date. Schools with power can attract superior teachers, increase the number and types of classes, and help students connect with the world. One of our largest program partners, buildOn, provides adult literacy classes, vocational training, and measure results ensuring that our school projects have the greatest impact on the community they serve.



CONSERVATION

Preserving biodiversity.

GivePower will partner with Empowered By Light and the Leonardo DiCaprio Foundations to provide solar energy to Virunga National Park, a UNESCO World Heritage Site in the eastern Democratic Republic of Congo. Home to nearly a quarter of the world's critically endangered mountain gorillas, Virunga is Africa's oldest national park and most biologically diverse protected area. Clean, reliable energy will help safeguard the great mountain gorillas and other endangered species.



ECONOMIC DEVELOPMENT

Setting local entrepreneurs up for success.

In Ghana, we're partnering with a local solar company to develop a 30 kW solar power system for an ICT college and tech incubator program. Solar power will provide the type of reliable electricity needed to ensure these aspiring technology entrepreneurs have access to the tools necessary to learn, collaborate and build successful companies that create local jobs.



TELECOMMUNICATIONS

Better access to information and financial services.

By partnering with mobile network operators, our solar solutions can increase access to information and lay the foundation for the use of mobile money. We can make digital payments, transfers, and pay-as-you-go infrastructure a reality. This will decrease travel costs associated with buying and selling goods, sending money to distant relatives—allowing farmers to retain more of their earnings to improve livelihoods.



Going full circle with GivePower

“Going to Haiti for GivePower was a great experience for me. As a person born in Haiti, I was filled with a sense of pride and felt as if my life had come full circle. I felt like I was once one of those children, filled with so much hope for the future. Once they saw those lights turn on, I realized that the simple things in life can mean so much. The whole community was overjoyed at the possibilities those solar panels would bring.”

Watson Joseph, SolarCity Licensed Electrician Crew Lead

Inspired by GivePower

“When we flipped on the lights and the whole [Haitian] village began to sing and dance, I got chills for the first time in years. It felt so awesome to make tangible and educationally enhancing improvements to the schools... We help a lot of people go solar every day but that was the first time I knew the folks who lived in the community, which made it so much more real. GivePower was the best thing I’ve done since Peace Corps, and possibly more rewarding.”

Scott Lowery, SolarCity Manager of Engineering Standards

Gaining perspective

“GivePower has given me perspective on the global impact of solar power and a tangible sense of what we do. Visiting a rural, developing community in Kenya and making a difference in the lives of students and the NGO partners we worked with on our trek was a life-changing way to experience the impact of solar firsthand.

We are so lucky to live in America, where the grid is stable and allows for easy access to basic amenities and needs, education, reliable healthcare, and many other resources that we take

for granted. So much of the world does not have reliable sources of power. This means that children can't learn for school, or must study by candlelight.

The GivePower trek reinvigorated me to double down on my work...My role is not just a job, but a career choice. Performing well in my role is a means of changing the world.”

Tasha Peláez, SolarCity Director of Commercial Sales Enablement

APPENDIX A: THIRD-PARTY VALIDATION AND DETAILED CALCULATIONS

CARBON ACCOUNTING DATA SOURCES AND METHODOLOGY

Reported scope 1 emissions include:

- Fleet emissions, based on mileage and vehicle data from fleet management software
- On-site natural gas consumption, based on utility data

Reported scope 2 emissions include:

- Purchased electricity, based on utility data

Reported scope 3 emissions include:

- Employee air travel, based on air miles traveled according to company-wide expenses and travel booking system; we doubled this initial value to reflect occasional employee non-compliance in using the system
- Solar module manufacturing (supplied by third parties): We requested and reviewed data from our solar modules suppliers who represented 2% or more of our total module supply in 2014. We received full statistics back from four suppliers, accounting for 71% of 2014 installed modules. These data were taken as given and not verified further. The average module supplier reported a carbon footprint of 277 metric tons of carbon per MW of solar modules produced (MT/MW), a median of 287 MT/MW, and a maximum of 395 MT/MW. For supplier modules not characterized by reported data (the remaining 29% of modules), we assigned an estimate of 400 MT/MW. These numbers were used for 2015 as well since most suppliers did not yet have updated data available.
- Balance of systems (BOS): BOS encompasses additional equipment and components of a solar power

system—such as inverters, wiring, and racking equipment. We estimated their carbon footprint to be incremental to module manufacturing emissions, and equal to 20% of module manufacturing emissions. This 20% premium was based on results compiled by the International Energy Agency’s Photovoltaic Power Systems Programme.

UTILITY DATA FOR SCOPE 1 AND 2 EMISSIONS

- Utility data in 2014: Utility consumption data was obtained directly from utility personnel and/or by adding together usage levels indicated on company utility bills. For any period in which data was unavailable, we applied the average monthly consumption for that site. Missing data accounted for less than 3.5% of all carbon emissions associated with utility usage. Our accounting did not include facilities that are under construction.
- Utility data in 2015: We estimated 2015 utility usage by extrapolating from 2014 monthly averages for each site. For locations first opened in 2015, we applied an average kWh / square foot (or therm / square foot) factor based on 2014 data from similar existing sites (by type and location), and applied it to the square footage of the new location. For our new Fremont manufacturing plant, which opened in 2015, we used actual utility data (rather than an extrapolation). We have not accounted for energy consumption from our Mexico operations, since they are limited in scope at this time.

BROADER CARBON CALCULATIONS

Amount of kilowatt-hours of electricity generated from customer solar power systems is based on actual production data. The US EPA Greenhouse Gas

Equivalencies CO₂ emissions factor of 0.000689551 metric tons of CO₂ per kWh was used to estimate how many metric tons of CO₂ were avoided by the use of solar. Both the emissions factor and calculator use the 2010 Emissions & Generation Resource Integrated Database (eGRID) US annual non-baseload CO₂ output emission data. Non-baseload emissions are from power plants that are brought online to meet demand, whereas baseload emissions are from power plants that run all the time. Baseload emissions are not expected to be affected by a reduction from solar energy use—it is assumed those plants will still operate. Our calculations use 2010 eGRID statistics to stay consistent with the US EPA GHG Equivalencies calculator. The eGRID statistics used reflect national averages.

Calculation of total CO₂ emissions avoided by SolarCity customer systems in 2015:

1,710,136,927 kWh x 0.000689551 metric tons / kWh = 1,179,227 metric tons CO₂.

This estimate is a conservative estimate for SolarCity, as it does not include greenhouse gases other than CO₂ and does not account for transmission or distribution losses characteristic of conventional grid power. eGRID lists this loss as 8.33% for the U.S. Further, eGRID only considers emissions from conventional generation—they do not include emissions produced by the extraction, processing, or transportation of fuels. For discussion of lifecycle emissions analysis, see next section.

LIFECYCLE CARBON ANALYSIS

To explore lifecycle emissions impacts, we adjusted our carbon footprint for 2015 as follows.

Scope 1: No change in scope

Scope 2: No change in scope

Scope 3:

- Employee air travel: No change in scope
- Module manufacturing (third party): Instead of using manufacturing-only data obtained from suppliers, we used 678 tons / MW for every module supplier per Trina’s carbon footprint analysis—which also accounts for raw material extraction and transport to manufacturing. This adjustment raised our impact from modules from 261,526 MT to 590,366 MT.
- Balance of systems (BOS): We conservatively used 20% of the adjusted, higher module manufacturer estimate for BOS.
- Additional adjustments: To factor in shipping of completed modules from the plant to the warehouse, we assumed incremental emissions equal to 5% of lifecycle emissions. To account for module disposal at the end of their expected 30-year life, we likewise assumed incremental emissions equal to 5% of lifecycle emissions. This equipment lifespan is consistent with NREL’s lifecycle analysis for solar.

These additional considerations increased our Scope 3 emissions to 788,983 MT CO₂ for 2015.

CARBON PAYBACK ANALYSIS

Our carbon payback analysis (Chart 1.3) assessed four different scenarios:

- Lower Estimate: This estimate includes SolarCity operations, but not module manufacturing or BOS
- Core Estimate: This estimate includes SolarCity operations and module manufacturing, as well as an incremental footprint for BOS.

- Lifecycle Estimate: This estimate includes SolarCity operations and Trina’s lifecycle analysis for module manufacturing (includes raw material extraction and transport to manufacturing), as well as an incremental footprint for BOS.
 - Extended Lifecycle Estimate: This estimate includes all of Lifecycle Estimate as well as incremental footprint factors for shipping and disposal
- Payback was calculated as follows (shown below for Lifecycle Estimate):
- Average 6 kW SolarCity system produces 8,418 kWh in its first year.
- Based on the US EPA Emissions Factor of 0.000689551 metric tons / kWh, 8,418 kWh avoids 5.8 tons of CO₂ per year.
- Lifecycle emission of 0.863 MT of carbon per kW installed x 6 kW system = 5.178 MT of CO₂ to install the system
- 5.178 MT lifecycle CO₂ emission / 5.8 MT first-year avoided CO₂ = Payback of 0.89 years
- 0.89 years x 12 months / year = 10.7 months
- The only variable in the above equation is how much carbon it takes to install a 6 kW system, depending on which estimate is being used. Here are the various inputs and outputs representing all scenarios graphed:
- Lower Estimate: 0.049 MT per kW installed, 0.294 MT to install 6 kW. Carbon payback: 0.61 months
 - Core Estimate: 0.409 MT per kW installed, 2.454 MT to install 6 kW. Carbon payback: 5.1 months
 - Lifecycle Estimate: 0.863 MT per kW installed, 5.178 MT to install 6 kW. Carbon payback: 10.7 months

- Extended Lifecycle Estimate: 0.949 MT per kW installed, 5.694 MT to install 6 kW. Carbon payback: 11.8 months
- ### LIFECYCLE COMPARISON TO OTHER FOSSIL FUEL TECHNOLOGY
- We converted our Extended Lifecycle Estimate (0.949 MT/kW) to grams / kWh as follows:
- 0.949 MT / kW x 6 kW / 235,057 kWh (over production system lifetime) x 1,000,000 grams / 1 MT = 24.2 g / kWh
- The expected lifetime kWh production of 235,057 kWh for a 6 kW system is based on an average first year production of 8,418 kWh, degrading by 0.5% annually over a 30-year system life. Since we are using estimates from an average residential system, our payback is based on residential production. However, the carbon footprint calculation reflects operations from across the entire company (which encompasses commercial and other types of installations).
- Comparative values for fossil fuel generation types are median values reported by **NREL’s Life Cycle Assessment Harmonization Project**. The NREL study’s estimate for solar PV’s lifecycle carbon footprint is somewhat higher than found in our internal analysis (i.e. ~40 g/kWh versus 24.2 g/kWh). Despite addressing the same categories and using the same 30 year lifetime, our numbers are lower for a few likely reasons. First, more than half of our residential installations are in areas of the western United States with above-average solar resource. **NREL assumes solar irradiation of 1700 kWh/m²/year**, which is representative of southern Europe. In contrast, solar irradiation in the US Southwest, where a large number of our systems operate, is closer to **2,400 kWh/m²/year**. Further, module efficiency has improved vastly since the 30 year time range that NREL used to compile studies.

NREL’s harmonized results suggest a 13.2% efficiency for multi-crystalline silicon solar modules. The efficiency of our installed modules is meaningfully higher than that.

SOLAR AND THE CLEAN POWER PLAN

Chart 1.5 is based on a typical SolarCity residential rooftop system—a 6 kW system producing 8,418 kWh in its first year. Deducting this from the average US home’s grid electric use (10,932 kWh in 2014 according to the currently available data from **EIA** leaves 2,514 kWh of grid usage, with a CO₂ footprint equating to roughly 1.41 MT CO₂—according to the total output CO₂ emission rate reported by **2010 eGRID**. (converting from 1,232.35 lb/MWh or equivalently 0.000559 MT/kWh). The current annual electricity-related carbon footprint of a US home is approximated by data from the **CoolClimate Network**, which indicates a national average household electricity carbon footprint of 7.43 metric tons CO₂ per year.

The "goal" level (5.05 MT CO₂) represents a 32% reduction from that level. EPA’s Clean Power Plan specifically calls for a 32% national reduction specifically below year 2005 emissions levels; the footprint data from CoolClimate may reflect subsequent years’ data (rather than 2005 in particular), but we judge that our analysis remains valid and instructive. The key takeaway is the comparative reduction implied by the policy target, relative to the dramatic impact of going solar.

AIR IMPACTS

Amount of kilowatt-hours of electricity generated from customer solar power systems is based on actual production data. Per **2010 eGRID**, non-baseload emissions for air pollutants are as follows:

Nitrogen Oxide: 1.393 lbs / MWh

Ozone: 1.5101 lbs / MWh

Sulfur Dioxide: 3.4026 lbs / MWh

Calculations:

Nitrogen Oxide:
1,710,137 MWh x 1.393 lbs / MWh =
2.382 million lbs

Ozone:
1,710,137 MWh x 1.5101 lbs / MWh =
2.582 million lbs

Sulfur Dioxide:
1,710,137 MWh x 3.4026 lbs / MWh =
5.819 million lbs

WATER IMPACTS

Amount of kilowatt-hours of electricity generated from customer solar power systems is based on actual production data. Per **US Geological Survey**, 19 gallons were used to produce 1 kilowatt-hour of electricity at US power plants.

1,710,137,000 kWh x 19 gallons / 1 kWh =
32,492,603,000 gallons

Olympic size pool has 660,000 gallons of water

32,492,603,000 gallons x 1 pool / 660,000 gallons = 49,231 Olympic-sized pools

Verification Statement SolarCity – CY2014 Global GHG Inventory

Background

Cameron-Cole, LLC (Cameron-Cole) was retained by SolarCity to perform an independent verification of its Greenhouse Gas (GHG) Emissions Inventory for Calendar Year (CY) 2014 for select facilities and emission sources as described in the “Verification Scope & Assertions” section of this statement. The GHG Inventory was developed according to the World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004 revised edition) and its associated amended dated February 2013. Our opinion on the results of the inventory, with respect to the verification objectives and criteria, is provided in this statement.

Responsibility of SolarCity & Independence of Verification Provider

SolarCity has sole responsibility for the content of its GHG Inventory. Cameron-Cole accepts no responsibility for any changes that may have occurred to the GHG emissions results since they were submitted to us for review. Based on internationally accepted norms for impartiality, we believe our review represents an independent assessment of SolarCity’s CY2014 GHG Emissions Inventory. Finally, the opinion expressed in this verification statement should not be relied upon as the basis for any financial or investment decisions.

Level of Assurance

The level of assurance is used to determine the depth of detail that a Verification Body designs into the Verification Plan to determine if there are material errors, omissions or misstatements in a company's GHG assertions. Two levels of assurance are generally recognized – reasonable and limited. Reasonable Assurance generates the highest level of confidence that an emissions report is materially correct (with the exception of Absolute Assurance which is generally impractical for companies to achieve). Limited Assurance provides less confidence, and involves less detailed examination of GHG data and supporting documentation. Limited Assurance statements assert that there is no evidence that an emissions report is not materially correct. Cameron-Cole’s verification of SolarCity’s GHG Emissions Inventory for CY2014 was constructed to provide a Limited Level of Assurance for Scope 1 and Scope 2 sources; no Materiality threshold was applied to Scope 3 sources.

Objectives

The primary objectives of this verification assignment were as follows:

- Determine whether the GHG emissions assertions meets/exceeds the 90% threshold for accuracy for Scope 1 and 2 emissions, and select Scope 3 sources; and,
- Evaluate the conformance of SolarCity’s accounting and calculation methodologies, processes and systems to the GHG Protocol.
- Review methodologies and systems used for preliminary assessment of un-reported scope 3 emissions associated with equipment manufacturing.

Verification Statement SolarCity – CY2014 Global GHG Inventory

Verification Criteria

Cameron-Cole conducted verification activities in alignment with the principles of ISO-14064-3:2006(E) Specifications with Guidance for the Validation and Verification of Greenhouse Gas Assertions. The SolarCity inventory was prepared to, and verified against, the WRI/WBCSD GHG Protocol.

Verification Scope & Assertions

The scope of the verification covers SolarCity's CY2014 GHG Emissions Inventory with the following boundaries:

- Scope 1 – Direct Emissions from Stationary Combustion Sources: using and natural gas
- Scope 1 – Direct Emissions from Mobile Combustion Sources: owned vehicle fleet
- Scope 2 – Indirect Emissions from Electricity Purchases: from PG&E and SCE
- Scope 3 – Business air travel

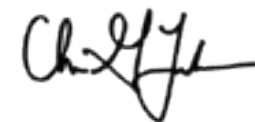
SolarCity’s GHG assertions are as follows: For CY2014, SolarCity reported a total of 16,359 metric tons (MT) carbon dioxide equivalents (CO₂-e) from direct emission sources (Scope 1), primarily from vehicle fleet; and 1,952 MTCO₂-e of indirect Scope 2- location based emissions.¹

Verification Opinion

Based on the method employed and the results of our verification activities, **Cameron-Cole has found no evidence of material errors, omissions or misstatements in SolarCity’s CY2014 GHG Inventory within the boundaries described above.** Cameron-Cole also found that SolarCity’s GHG accounting and calculation methodologies, processes and systems for this inventory conform to the WRI/WBCSD GHG Protocol.

Cameron-Cole, LLC

June 10, 2016



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¹ Note that no contractual-based Scope 2 emissions have been reported.

