

# U.S. Homeowners on Clean Energy: A National Survey

2015 Poll Results  
& Clean Energy Growth Trends

A Clean Energy Briefing for the C-Suite  
2nd Annual Edition, March 2015

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**SolarCity** and **Clean Edge**  
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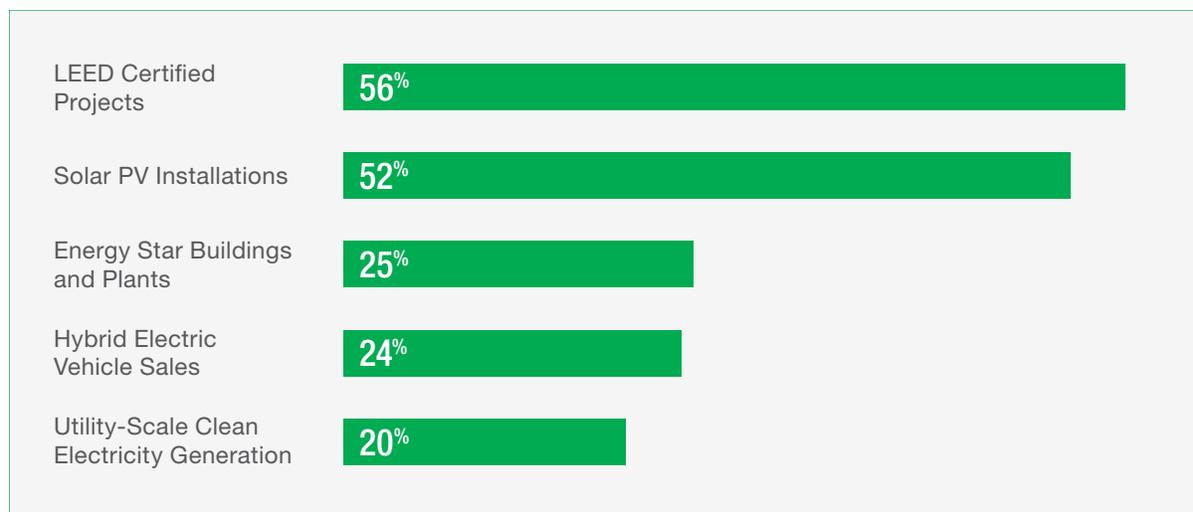
# Contents

<b>Executive Summary</b> .....	<b>04</b>
<b>Survey Results</b> .....	<b>07</b>
Energy Preference .....	08
Consumer Preferences .....	11
Impact Investments .....	14
Policy & Regulatory Support .....	16
<b>Clean Energy Adoption and Growth</b> .....	<b>19</b>
LEDs .....	20
Electric and Hybrid Vehicles .....	21
Green Buildings .....	22
Clean Energy Generation and Solar PV Installations .....	24
<b>About &amp; Disclaimer</b> .....	<b>27</b>
SolarCity .....	27
Clean Edge.....	27
Zogby Analytics .....	28
<b>Appendix: A - Survey Results</b> .....	<b>29</b>

## Executive Summary

In our second annual survey of U.S. homeowner purchasing trends and attitudes, we find that clean-energy products and services – including solar PV, utility-scale renewables, hybrid electric vehicles, and green buildings – continue to experience double-digit compound annual growth rates (CAGRs). Sustained double-digit growth rates for more than a decade reflect the long-term nature of this current shift to more efficient, cleaner, and environmentally friendly products and services. But don't be mistaken; as our research clearly points out, it is cost savings, much more than environmental factors, that are driving this monumental shift. Our annual survey of U.S. homeowners provides a deeper view into what's motivating these consumers, and looks at the often-nuanced reasons behind this notable transition.

### 11-Year Compound Annual Growth Rates (CAGRs)



Source: USGBC, IREC, Energy Star, Electric Drive Transportation Association, and EIA with Clean Edge analysis for years 2003-2013

To better understand this rapidly developing market, and the consumers behind it, SolarCity and Clean Edge commissioned a survey of U.S. homeowners by polling firm Zogby Analytics. Now in its second year, the annual survey focused on U.S. homeowners' choices and attitudes towards a range of energy technologies. 1,400 respondents were randomly selected to answer questions about renewables, energy efficiency, clean transportation, green investing, conventional energy sources, utilities, and other related topics. The purpose of the survey was to learn what homeowners know and think about clean-energy products and services and to gain insights into homeowners' purchasing decisions and attitudes.

All online surveys were completed between January 20 and January 22, 2015. Based on a confidence interval of 95%, the margin of error for the survey of 1,400 homeowners is +/- 2.7 percentage points.

## **Key findings from the 2015 U.S. Homeowner Survey include:**

### **Americans Overwhelmingly Choose Solar and Wind Over Natural Gas, Nuclear, and Coal**

- Half of all homeowners selected solar power as the most important energy source for America's future, and solar is the top choice across all major demographics (such as Republican, Democratic, Liberal, Conservative, North, and South).
- Wind power ranked a strong second with support of 42% of homeowners, followed by natural gas (33%) and energy efficiency (25%).
- Ranking in the middle of the pack were oil (17%), hydroelectric power (17%), waste to energy (16%), and nuclear power (14%). At the bottom were geothermal power (10%), coal (8%), and biofuels/biomass (7%).
- While solar was supported across all age groups, both natural gas and nuclear declined significantly with younger respondents. Natural gas was supported by those over 70 (43%) but dropped down significantly to 27% for those aged 18-24. Nuclear was supported by those over 70 (24%) but dropped precipitously to 8% for ages 25-34 and to just 1% for ages 18-24.

### **For Consumers, It Continues to be About Economics**

- "Saving money" (82%) tops the list as the primary motivator influencing homeowners' decisions to purchase clean-energy products and services.
- "Reducing my environmental impact" comes in a distant second place at 34%.
- The most popular reason cited for someone's likelihood to install solar was "saving on monthly electrical bills." Nearly two-thirds (64%) said this would have the highest impact on their decision to install solar panels.
- Over the next year, the most planned clean-energy purchases by homeowners tend to be those that save money and have relatively low upfront costs, including LED light bulbs (27%), smart thermostats (12%), and Energy Star-rated hot water heaters (9%).

## More than Half of Investors Consider the Social and Environmental Impacts of their Investments

- When making investment decisions, a majority of homeowners say that they consider the social/environmental impact of their investment (52%) and generally expressed an interest in “impact investments,” which offer social and environmental benefits.
- Three quarters (74%) said that such investments would be compelling if they offered a “potentially higher return than other options” and 61% said such investments would be compelling if they offered “a return that is at least as good as other options.”
- Profits still trump sustainability however. Interest drops significantly, to just 22%, when such investments offer “a slightly lower return than other options.”
- The primary reasons given for making a personal investment with social/environmental benefits were (in order): the potential to earn higher returns than those provided by savings/CD accounts (54%); supporting the growth of American jobs (12%); and helping people switch to solar power and creating a cleaner, more sustainable future (11%).

## Homeowners Back Federal Support of Clean Energy and Oppose Utility-Driven Roadblocks

- Homeowners overwhelmingly support the continuation of federal tax incentives that support the growth of the solar and wind industries (74%). Support is high across all major party affiliations, 82% for Democrats, 67% for Republicans and 72% for Independents.
- Respondents believe that utilities should not block the expansion of solar power. A strong majority (61%) oppose any utility effort to impose a rooftop solar fee for panels that are connected to the grid, while just 24% support such fees. Such opposition is stronger among rural dwellers and Republicans than city residents and Democrats.

In the following report, SolarCity and Clean Edge delve into these findings, reporting on and analyzing our second annual homeowners’ survey. The report also includes a look at the high growth of clean-energy technologies over the past 11 years and a discussion of recent consumer adoption trends.

SolarCity and Clean Edge plan to release the homeowner survey annually, with the next report scheduled for early 2016.

The 2015 report is available for free download at [www.cleaneedge.com/reports](http://www.cleaneedge.com/reports) and [www.solarcity.com/insideenergy](http://www.solarcity.com/insideenergy)

# Survey Results

## Survey Overview and Methodology

SolarCity and Clean Edge, in this second annual edition, embarked on a survey of U.S. homeowners to better understand consumers' clean-energy behaviors, perceptions, and attitudes. We commissioned the polling firm Zogby Analytics to conduct an online survey of 1,400 homeowners across the U.S. The survey's purpose was to ascertain knowledge of and attitudes toward clean-energy products and services, as well as general attitudes about electric utilities, future energy options, and green investing. Thousands of U.S. adults were invited by Zogby Analytics to participate in this interactive survey. The field of participants was narrowed down to only include homeowners. Invitations were password-coded and secure so respondents could only access the survey one time. Based on a confidence interval of 95%, the margin of error for the survey of 1,400 homeowners is +/- 2.7 percentage points. All interviews were completed between January 20 and January 22, 2015.

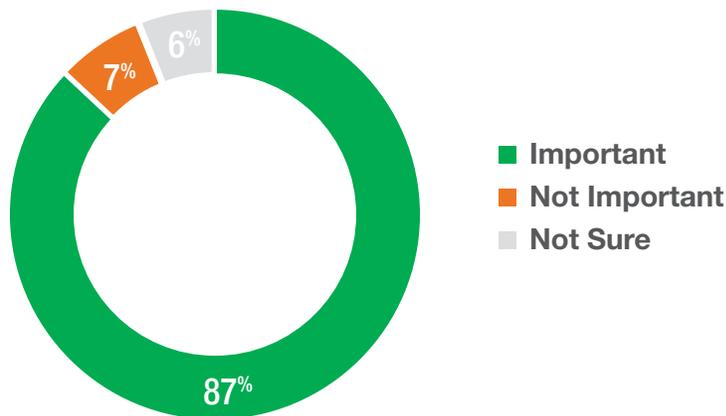
## Key Findings

Following are the top findings of the survey, with supporting tables. To access the full public survey questionnaire and responses, see Appendix A on page 29.

## Americans Overwhelmingly Choose Solar and Wind

Holding steady with last year's survey, nearly nine in ten Americans (87%) say renewable energy is important to the country's future. In a nation divided by so many other issues, from immigration policy to climate change, this support for renewable energy is in many ways unprecedented. Few other topics get such wide support across so many demographics.

### | How important is renewable energy to America's energy future?



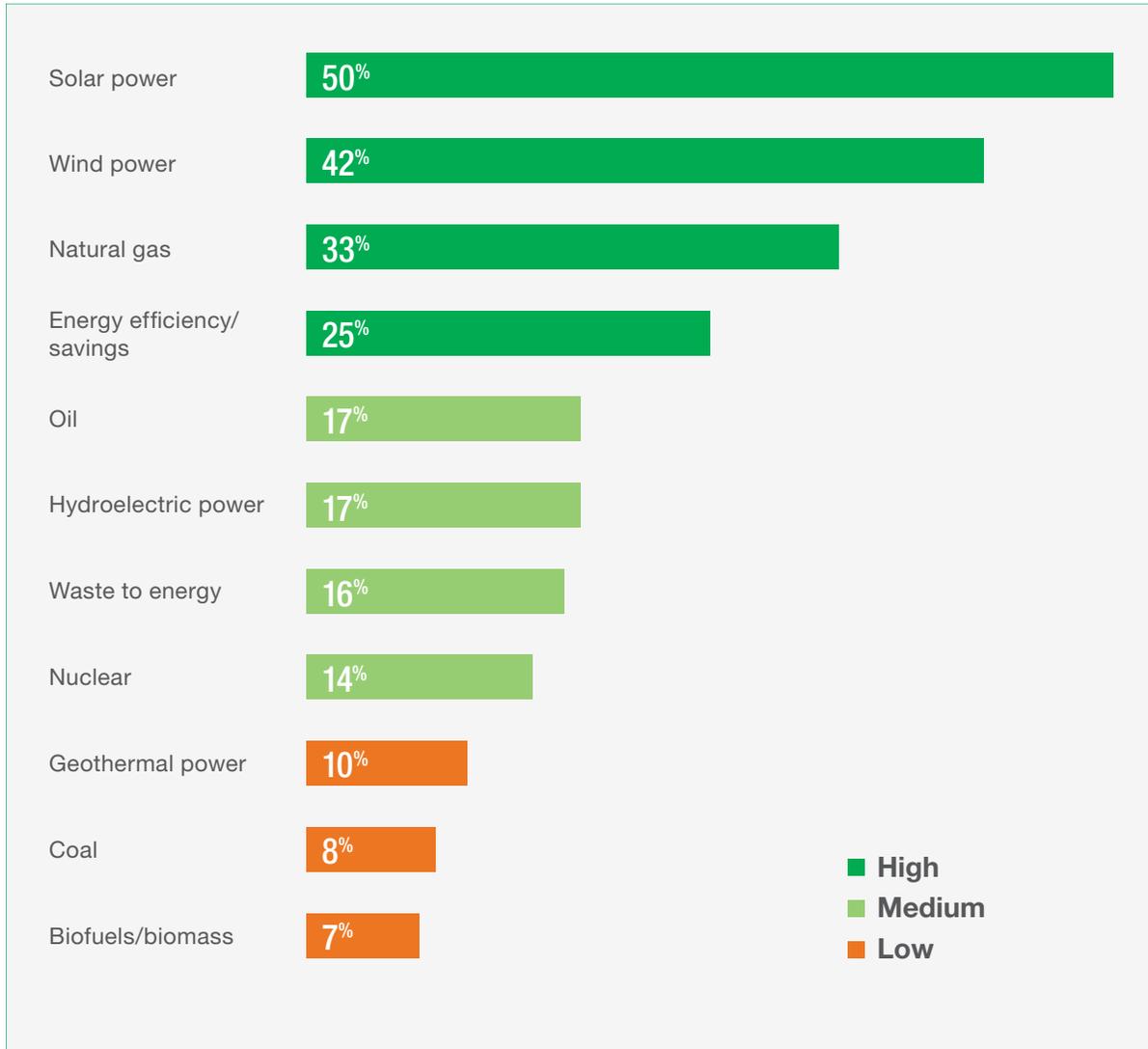
While renewables are considered important by the vast majority of homeowners, for this year's survey we asked a new question to dig deeper into how homeowners rank the importance of both renewable and conventional sources to the nation's energy future. The results show Americans believe the nation's energy future relies first and foremost on solar and wind power, followed by natural gas and energy efficiency. At the very bottom of the pack were coal and biofuels/biomass.

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**50%** of Americans selected solar as the most important energy source for America's future, compared to just 8% for coal

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## Which energy sources do you believe are most important to America's energy future? (Pick up to three)



Half of all homeowners selected solar power as the most important energy source for America's future, with solar being the top choice among all major demographics, including Republicans, Democrats, Independents, conservatives, progressives, city and rural dwellers, the young, and the elderly.

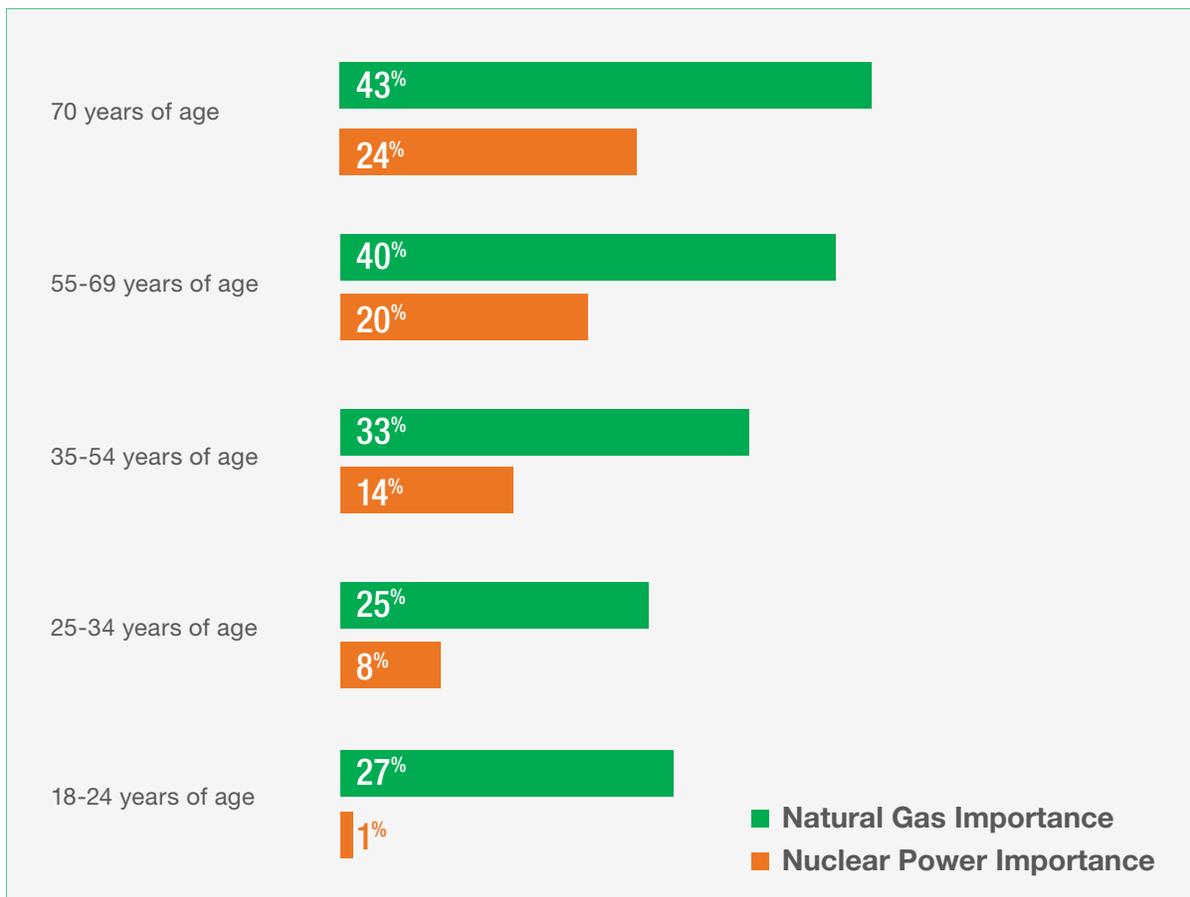
Also ranking high were wind, a strong second place with 42% support, followed by natural gas (33%) and energy efficiency (25%). The top four sources were consistent (in the same order of importance) among all regions of the country (East, South, Center Great Lakes, and West).

Ranking in the middle of the pack were oil (17%), hydroelectric power (17%), waste to energy (16%), and nuclear power (14%).

At the bottom were geothermal power (10%), coal (8%), and biofuels/biomass (7%). This reflects a very dramatic turn of fortunes for the once dominant U.S. coal industry, as well as negative perceptions surrounding a U.S. biofuels industry that currently uses corn (competing with food crops), instead of being built off of waste streams (which scored considerably higher among respondents).

One of the most striking demographic insights revolves around differences among age groups. Whereas support for solar and wind was consistently high among all age groups, natural gas and nuclear power did not maintain such support across the age spectrum. Both natural gas and nuclear power declined significantly with younger respondents. Natural gas received solid support from those over 70 years of age (43%) but dropped to 25% for 25-34 year olds and 27% for 18-24 year olds. Nuclear's decline was more notable, dropping from 24% support among those over 70 years of age to just 1% for those 18-24 years of age.

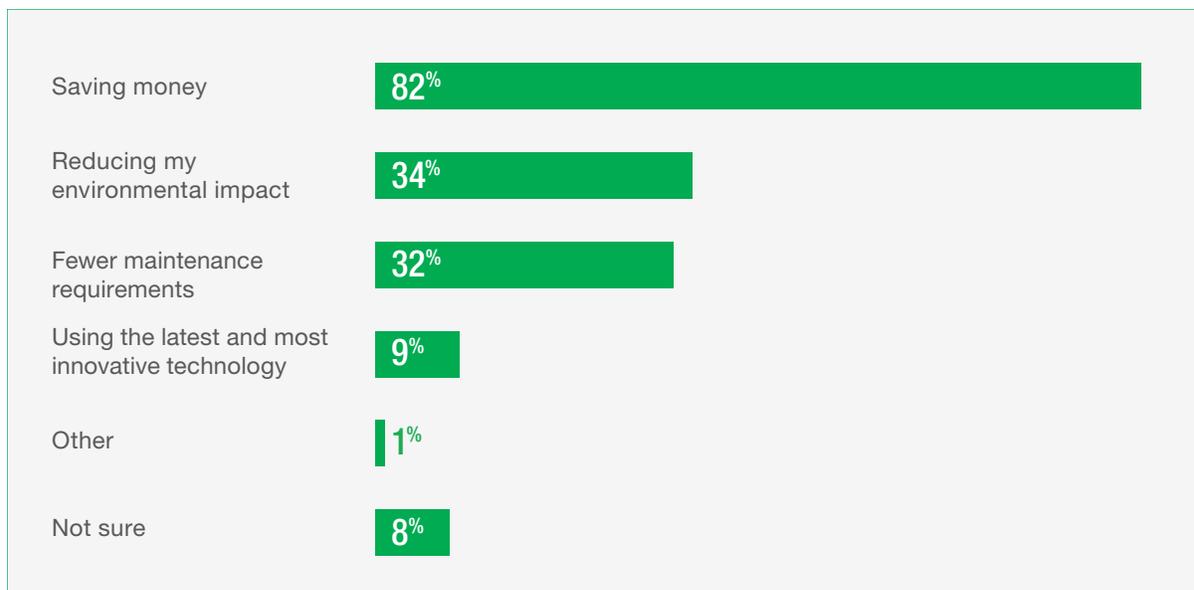
### Support for natural gas and nuclear decline with younger respondents



## For Consumers, it Continues to be About Economics

While survey respondents say they care about the environment, it's cost savings that truly motivate them. Similar to last year's findings, "saving money" (82%) tops the list as the primary motivator influencing homeowners' decisions to purchase clean-energy products and services. "Reducing my environmental impact" comes in a distant second at 34%.

### When making decisions around purchasing clean-energy products and services, which of the following are your primary motivators? (Choose up to two)

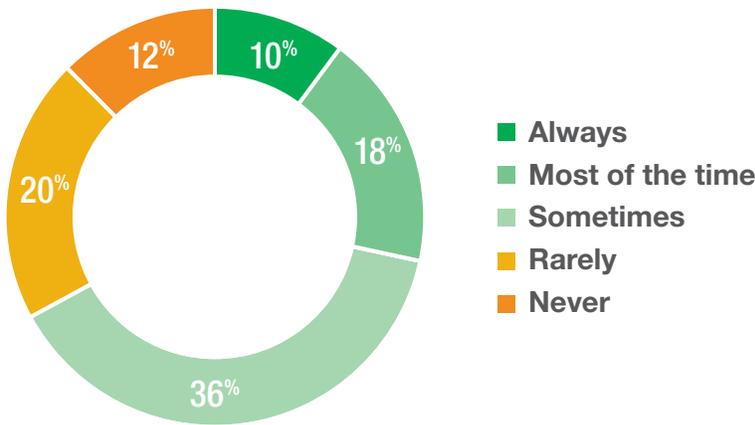


Reflecting this sentiment for questions specifically related to solar power, the most popular reason cited for someone's likelihood to install solar was "saving on monthly electrical bills." 64% said this would have the highest impact on their decision to install solar panels. It even outweighed having "to pay no upfront fees" (54%). Further down in impact were "locking in rates for 20 years" (38%) and near the bottom of reasons to install solar was "reducing my environmental impact" (35%).

This doesn't mean that homeowners don't care about the environment and their environmental impact. 65% of Americans say they consider or investigate such

factors at least sometimes when making big-ticket purchasing decisions. And 75% of respondents say they are taking at least some actions to help reduce the impact of greenhouse gas emissions. But even so, it's the promise of saving money and reducing costs that's the primary motivator for their decisions to buy clean-energy products and services.

**How often do you consider or investigate the environmental impact/sustainability of big-ticket items (cars, homes, etc.) when making purchasing decisions?**



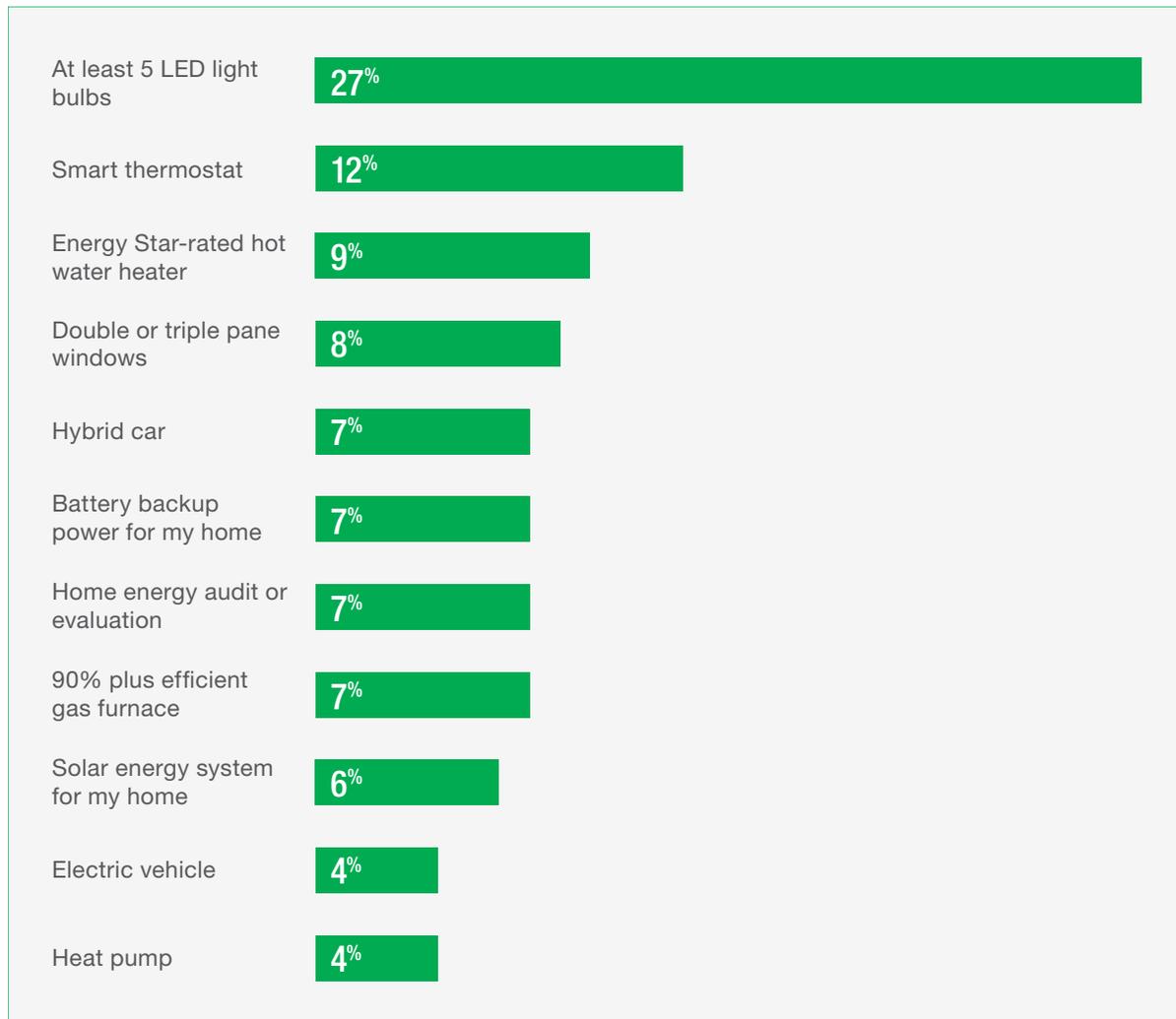
Consistent with last year's survey, the top five past clean-energy purchases, in order, were LED light bulbs (56%), Energy Star-rated hot water heaters (36%), double or triple pane windows (28%), smart thermostats (21%), and 90% efficient gas furnaces (14%). LEDs showed the greatest increase from last year's survey, up six percentage points from 50%.

**Top Five Past Purchases**

- #1. LED Light Bulbs (At Least 5)**
- #2. Energy Star Rated Hot Water Heater (Gas/Electric)**
- #3. Double or Triple Pane Windows**
- #4. Smart Thermostat**
- #5. 90% Plus Efficient Gas Furnace**

Over the next year, the most planned clean-energy purchases by homeowners continued to be those that tend have relatively low upfront costs, including LED light bulbs (27%), smart thermostats (12%), and Energy Star-rated hot water heaters (9%). Among the other options tracked, electric vehicles and hybrids both dropped the most from last year's results. It's worth noting that the survey window corresponded with some of the lowest oil prices in recent memory, down approximately 50% from the prior year. Residential solar power systems, backup power, heat pumps, and most other clean-energy options held steady.

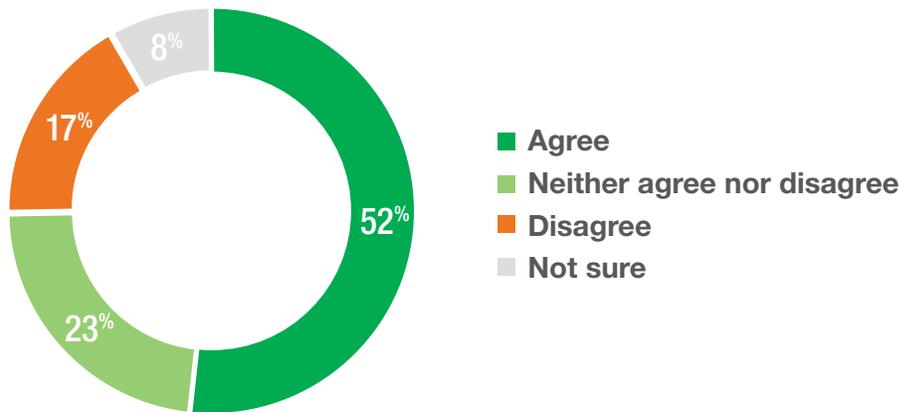
### Which, if any, clean-energy purchases are you likely to make in the next year? (Choose all that apply)



## More than Half of Investors Consider the Social and Environmental Impacts of their Investments

This year we added questions about what drives investors when making decisions regarding stock, bond, and CD investments. At a high level, more than half of American homeowners (52%) say that when making investment decisions they consider the social/environmental impact of their investment. They also express, at a somewhat higher percentage, an interest in “impact investments,” which promise not only financial returns but social and environmental returns as well.

**When making investment decisions do you agree or disagree with the following statement: *I consider the social and environmental impacts of the investment, as well as the financial return.***



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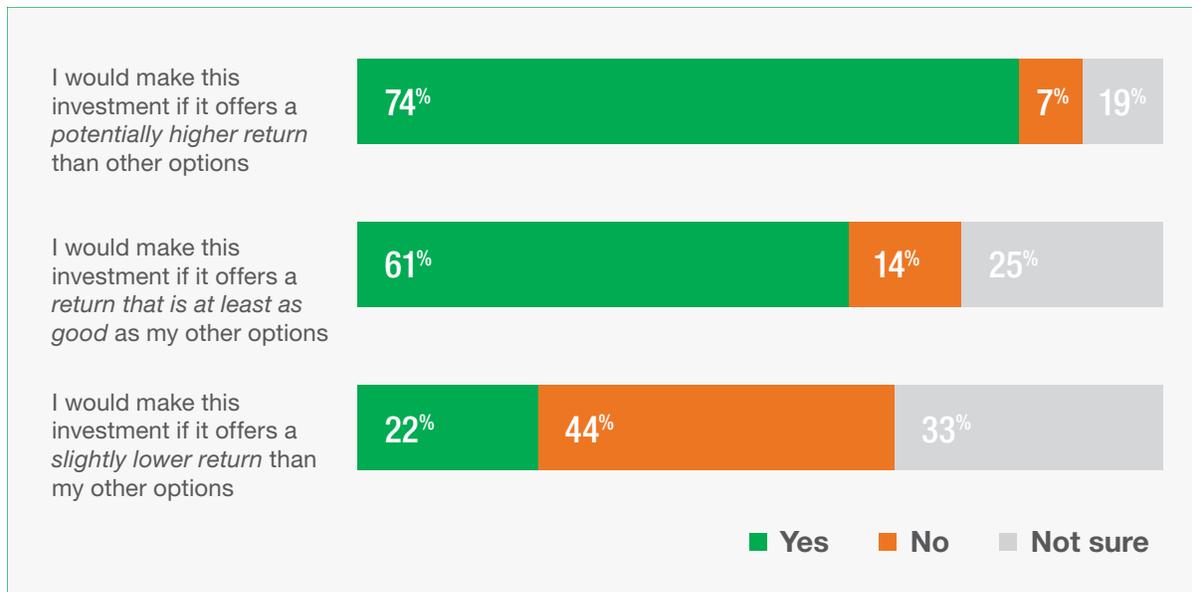
**52%** of homeowners say they consider the social and environmental impact of their investments

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74% said that such investments would be compelling if they offered a “potentially higher return than other options” and 61% said such investments would be compelling if they offered “a return that is at least as good as other options.”

But it turns out that Americans feel similarly about their investment choices as they do when it comes to buying products and services. They are interested in the environment, as long as they don’t have to compromise on financial returns. In our survey, interest drops to just 22%, when such investments offer “a slightly lower return than other options.”

**There is a new category of investing called 'impact investing' that offers financial as well as social and environmental returns, e.g. creating jobs and helping protect the environment. Please respond 'Yes' or 'No' to the following statements:**



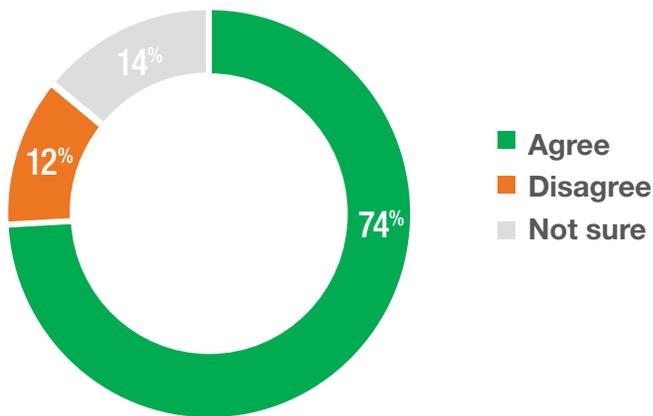
When asked for more specifics, the primary reason given for making a personal investment with social/environmental benefits is the potential to earn higher returns than those provided by savings/CD accounts (54%). That reason ranked far higher than those related to social or environmental promises, such as supporting the growth of American jobs (12%) or helping people switch to solar power and creating a cleaner, more sustainable future (11%).

As the financial services industry introduces an increasing number of clean-energy investment options, such as mutual funds, exchange traded funds, yieldcos, and bonds – and an increasing number of investors look to gain exposure to this tech-driven sector or to divest from carbon-intensive industries – tracking such sentiments and drivers will become increasingly significant.

## Homeowners Back Federal Support of Clean Energy and Oppose Utility-Driven Roadblocks

While members of Congress seem divided on whether or not to extend federal incentives for clean energy, their constituents are not. Americans support the continuation of these incentives – the wind production tax credit and solar investment tax credit – by a wide margin. Indeed, our survey found that homeowners support the continuation of federal tax incentives that support the growth of the solar and wind industries by 74%, with high levels of support across all major party affiliations. 82% of Democrats support such policies, and so do two thirds (67%) of Republicans and 72% of Independents.

**In recent years, federal tax credits have enabled both the solar and wind industries to expand, with solar and wind both more than doubling their generation over the past five years. Do you agree or disagree that the federal government should continue to offer such incentives?**



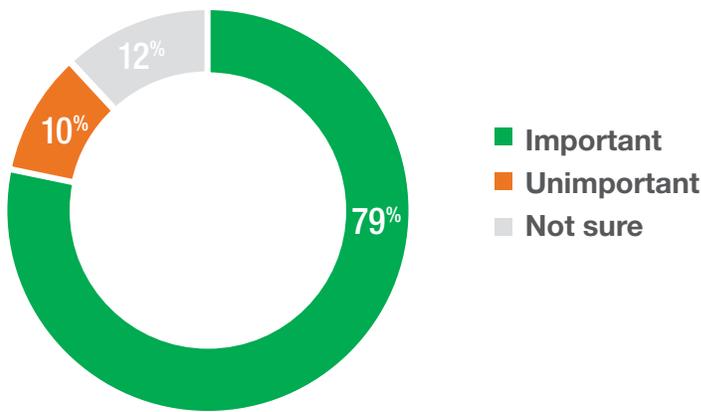
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**74%** of U.S. homeowners back the continuation of federal tax incentives that support the growth of solar and wind

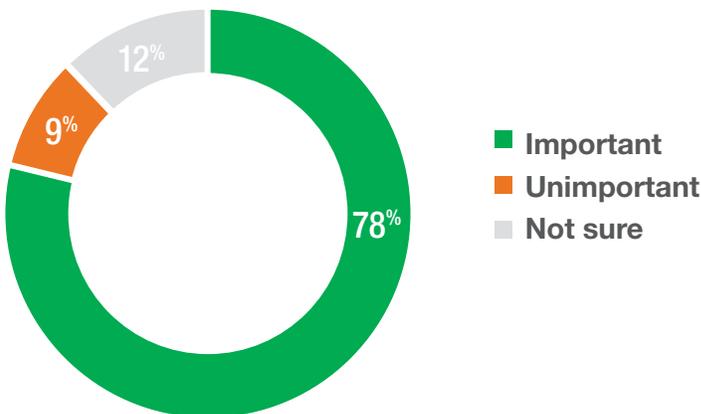
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Backing up this support, 78% of respondents believe it is important that the U.S. be a global leader in developing and deploying solar energy systems and 79% believe it's important to the U.S. economy to domestically manufacture solar energy systems and solar panel components.

**How important do you think it is to the U.S. economy to domestically manufacture solar energy systems, and solar panel components?**

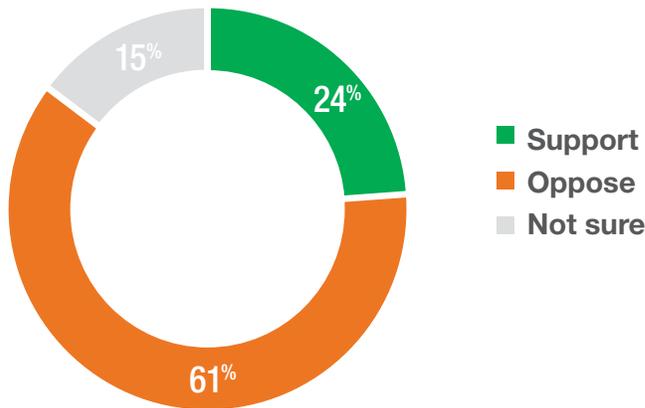


**How important is it to the future of the U.S. for the nation to be a global leader in developing and deploying solar energy systems?**

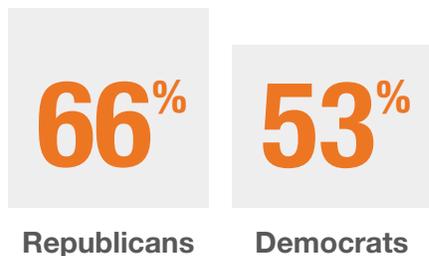


Last year's survey was the first to ask homeowners if they wanted choice in their electricity provider and supply, with a majority saying yes. This year, respondents echoed that desire for unfettered choice, noting that utilities should not be allowed to block the expansion of solar power. A solid majority (61%) oppose (and 43% strongly oppose) any utility effort to impose a rooftop solar fee for panels that are connected to the grid, while just 24% support (and only 8% strongly support) such fees. A similar ratio (53% to 26%) views any additional utility fee for connecting residential solar panels to the grid as a tax on solar power.

### Do you support or oppose electric utility companies being able to charge an additional fee to solar powered homes and businesses?



Such sentiments seem to transcend geographic and political boundaries. Opposition to such fees grows stronger in rural communities (67%) than large cities (47%). And Republicans (66%) oppose utility charges for solar more than Democrats (53%).



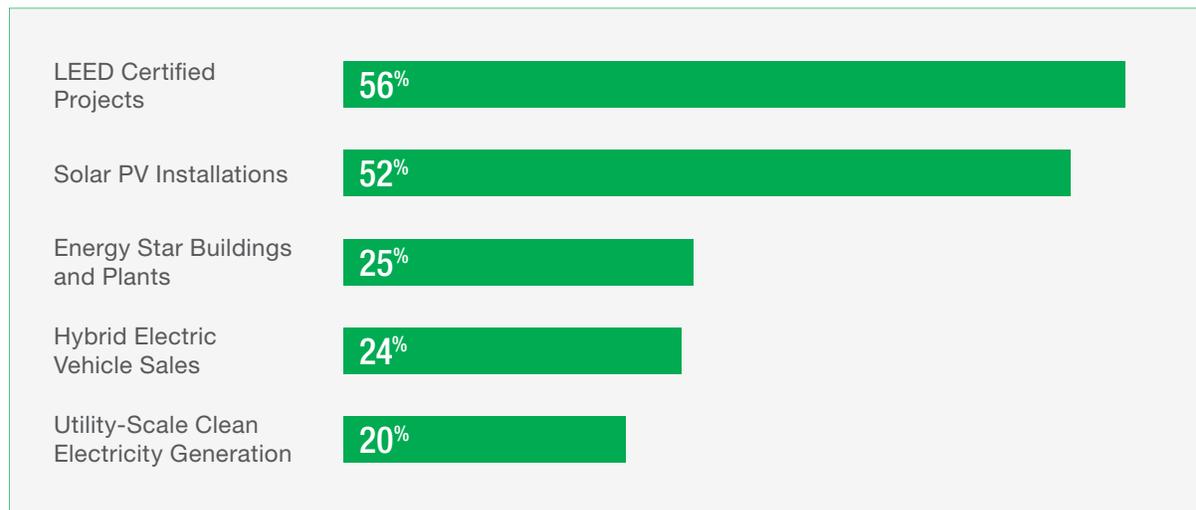
While the majority of homeowners oppose utility charges, such opposition is higher among Republicans than Democrats

## U.S. Clean Energy Adoption and Growth

As highlighted in this year's survey, U.S. consumers are increasingly adopting clean-energy products that save them money while producing environmental benefits. There are a host of explanations for this shift in consumer behavior, including growing environmental concerns and improved product attributes, but foremost among the drivers are the improving economics for clean-energy products and services. We are in a period of rapid innovation that has seen the costs of everything from efficient light bulbs to solar power fall dramatically. Consumers are increasingly aware of the financial benefits that clean-energy products offer – and are taking advantage of them.

Since our first survey of U.S. homeowners one year ago, the compound annual growth rates (CAGRs) for many of the clean-tech products we track – including hybrid electric vehicles, utility-scale renewables, and solar PV – have continued to be well into the double-digits. Electric vehicles (EVs) and light-emitting diode (LED) light bulbs, with fewer years of sales data behind them, continued to maintain their astounding triple-digit CAGR paces. Across the board, these growth rates are more akin to those experienced by the smart phone and Internet sectors than those of the usually staid energy and transportation sectors.

### 11-Year Compound Annual Growth Rates (CAGRs)



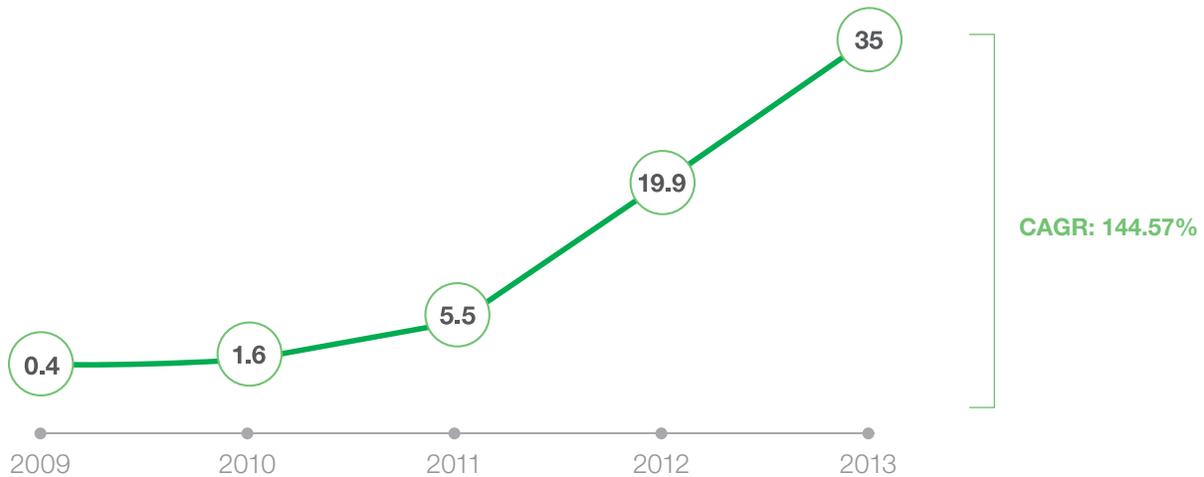
Source: USGBC, IREC, Energy Star, Electric Drive Transportation Association, and EIA with Clean Edge analysis for years 2003-2013

The following is a closer look at the rapid rise in clean-energy product adoption rates, what's driving this activity, and how the near-to mid-term might be shaping up.

## A Great Leap Forward for LEDs

LED light bulbs had a banner year for growth in 2013, and three LED pioneers received the Nobel Prize in physics last year for their breakthroughs in LED lighting technology. Based on Clean Edge analysis, we estimate that installations of A-type (the most common standard size) LED bulbs in the U.S. reached 35 million in 2013, up from just below 20 million in 2012 and near zero in 2009. That represents a compound annual growth rate of 145%. While such a high growth rate isn't sustainable in the long run, we expect to see triple- and double-digit CAGRs continue in the near- to mid-term as the transition to LEDs ramps up.

### Annual LED Installations: United States (A-Type Lamps, in Millions)



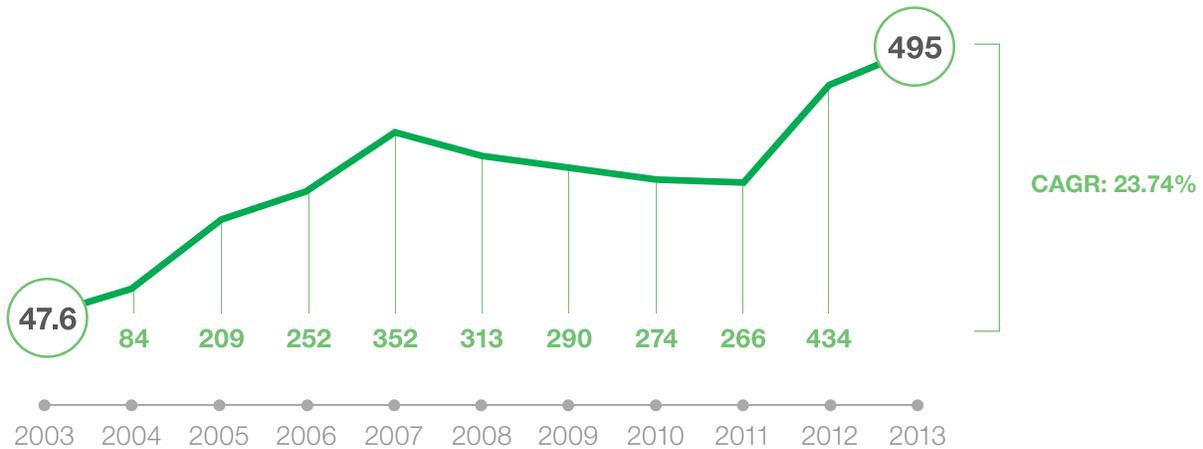
Source: Clean Edge analysis which incorporates published figures from Navigant/DOE (2009 through 2012) combined with other industry growth estimates for 2013

Consumers have benefitted greatly from improvements in the technology, quality, and costs of LED bulbs. And as we learned in last year's survey, the number one clean-energy item on homeowners' shopping lists was LEDs. That's largely because the average cost of an LED bulb has fallen from nearly \$70 in 2010 to around \$10 now, according to U.S. Energy Information Administration (EIA) data. The EIA forecasts further price drops, with LEDs reaching near-cost parity with CFLs by the end of this decade. In fact, some 60-watt equivalent LED bulbs from makers such as Philips and Cree are now available at less than \$4 at big box retailers such as Lowe's and Home Depot. Meanwhile, across the nation, utilities and their partners continue to offer their customers incentive programs that further reduce the cost of LEDs. The Environmental Protection Agency's Energy Star program reports that LED incentives expanded from 15% of all Energy Star lighting incentives in 2013 to 19% in 2014. Coupled with the phase-out of incandescent light bulbs (the original light bulb invented by Thomas Edison), these factors should continue to spur robust growth in the LED market for years to come.

## Electric Vehicle Sales Begin to Mimic (and Even Surpass) the Super-Charged Growth of Hybrids

Sales of hybrid electric vehicles (HEVs) and all-electric vehicles (EVs) continued their robust growth in 2013. HEV sales approached the 500,000 mark in the U.S. for the first time, a far cry from the fewer than 50,000 sold in 2003. The CAGR over those 11 years is 24%, which is virtually unchanged from last year's report.

### Hybrid Electric Vehicle Sales: United States (in Thousands)



Source: Electric Drive Transportation Association with Clean Edge analysis

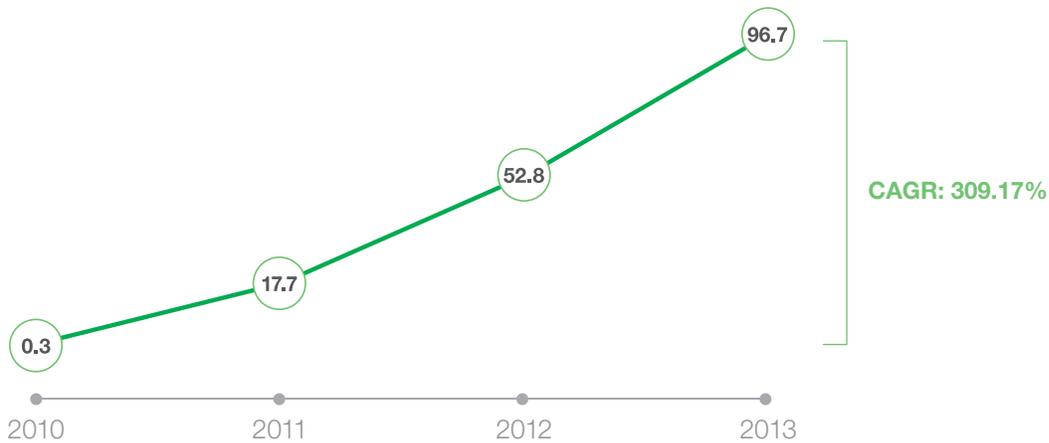
The HEV market has undergone drastic changes since the introduction of the first Toyota Prius more than a decade ago. For years, the Prius family (which now includes three models) was the undisputed king of the HEVs, commanding more than 58% of the hybrid market as late as 2012, per IHS data. In 2013, the Prius family was still the top-selling HEV at 43% in the U.S., but it had nearly 50 challengers in the marketplace. Toyota hopes to regain its former market share by introducing a revamped, sportier Prius for the 2016 model year, but with so much new competition, it may face an uphill climb.

Meanwhile, sales of hybrids' all-electric cousins continued to surge ahead. The Department of Energy reported in 2013 that EVs have surpassed the early sales growth rates of their hybrid brethren. All-electric vehicles – a category which includes plug-in hybrid, extended range, and battery EVs – nearly doubled their overall 2012 sales figure in 2013, rising to more than 96,000; as recently as 2010, less than 350 EVs were sold in the U.S. The four-year CAGR for EVs checks in at an impressive 309%.

What's driving the growth in EV sales? EVs are becoming both more visible and cheaper to buy. In fact, some consumers are skipping the intermediary hybrid

step and going straight to all-electric vehicles now that there are more options in the luxury and mid-tier categories, such as the Nissan Leaf, Chevy Volt, and Tesla Model S. EV battery prices are trending downward, and Tesla's 2014 announcement of a new battery "gigafactory" is expected to continue lowering the cost (and boosting the supply) of EVs. EVs also win points due to their safety, style, and sustainability. A federal tax credit of up to \$7,500, access to carpool lanes in states such as California, and greatly expanded EV charging infrastructure have likely helped, as well.

### Electric Vehicle Sales: United States (in Thousands)



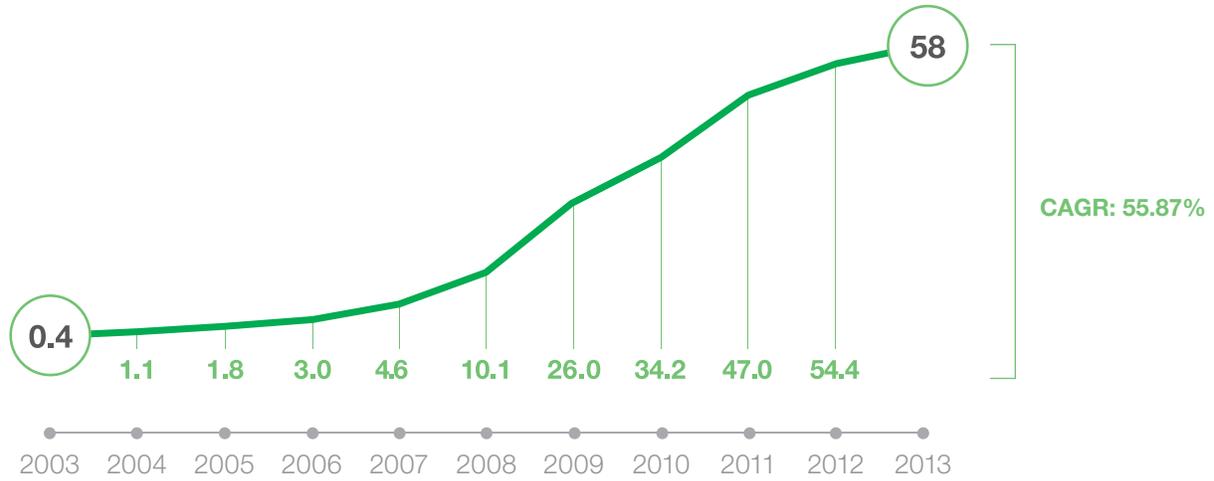
Source: Electric Drive Transportation Association with Clean Edge analysis

Still, one factor could profoundly impact the market for HEVs and EVs: the recent plummet in oil and gas prices. Perhaps not coincidentally, preliminary data for 2014 (a year in which prices tumbled for gasoline) suggests the market share of all electric vehicles has fallen for the first time since 2011. How long the low gas prices last, and what effect they will have on the hybrid and electric vehicle market, remains to be seen.

### A Surge in Green Building Activity

Green building trends continued their upward momentum in 2013. More than 5,800 buildings in the U.S. became LEED-certified during the year, resulting in an 11-year CAGR of 56%. The number of buildings obtaining LEED certification has increased every year since 2003, demonstrating just how popular the rating system has become.

### LEED Certified Projects in the United States (in Hundreds)



Source: USGBC data with Clean Edge analysis

The Energy Star program, which only tracks commercial buildings and multi-family residences and not single-family homes, has seen its building certification numbers fluctuate more in recent years. 2013 saw commercial and industrial Energy Star certifications dip to 6,960 from more than 8,300 in 2012. Over the past 11 years, though, the Energy Star program continues to have a healthy CAGR of 25%.

### Energy Star Buildings and Plants in the United States (in Hundreds)



Source: Energy Star with Clean Edge analysis

Meanwhile, home building represents a leading sector in the green building field. It isn't hard to see why: the Energy Star program estimates that qualifying new homes average \$300 in annual energy savings compared to typical homes, while delivering improvements in health and comfort. It's no surprise, then, that more than 77,000 new Energy Star single-family homes were built in 2013, representing almost 13% of new home market share while 47% of LEED certifications came through the LEED program's "Homes" rating system. Builders and homeowners are clearly getting the message: green building saves money in the long term.

Governments are getting that message, as well. An increasing number of U.S. cities, counties, and states are requiring new public buildings to meet LEED standards. Likewise, energy benchmarking and disclosure laws for commercial buildings are gaining popularity in cities across the country.

Could net zero buildings – those that generate the same or more energy than they use – be the wave of the future? Current federal targets are for all new federal buildings to be net zero by 2030, while California and the European Union have set standards calling for all new construction to be net zero (or nearly so) by 2030 and 2020, respectively. These are ambitious goals, but they are becoming increasingly common.

### Clean Electricity Continues Its Upward Trajectory

Electricity generation from renewable power sources (solar, wind, and geothermal) at the utility scale (installations of 1 MW and higher) continued to climb in 2013. These sources had a compound annual growth rate of nearly 20% during the 11-year period ended in 2013. Wind power once again led the way, producing nearly 87% of the nation's renewable electricity in 2013.

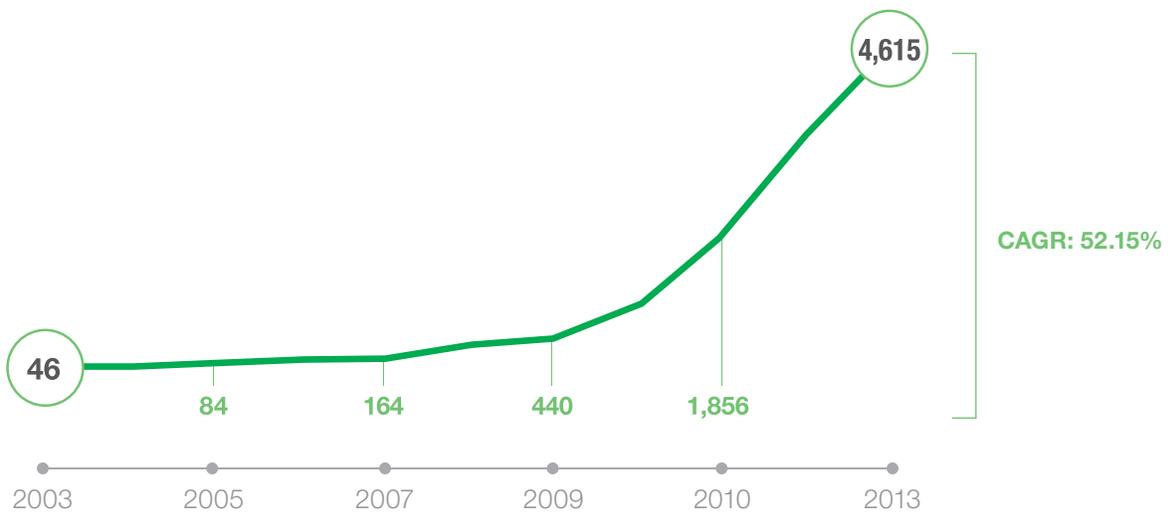
### Utility Scale Clean Electricity Generation: United States (in Millions of MWh)



Source: EIA with Clean Edge analysis. EIA electricity generation data is gathered from monthly surveys of power plants with capacity of at least 1MW; sub-1MW installations do not count towards generation totals

Distributed solar PV (residential, commercial, and industrial) has also seen significant growth over the past decade, with annual grid-connected installations jumping from near zero in 2003 to more than 4.6 GW in 2013 alone, for a CAGR of 52%. In the first three quarters of 2014, residential PV installations alone were up 58% year-over-year, according to the Solar Energy Industries Association. The same study noted that more than 50% of residential PV was installed without benefit of state incentives, pointing to the continuously falling costs of PV.

### Annual Grid-Connected Solar PV Installations: United States (Capacity Installed by MW-dc)



Source: IREC with Clean Edge analysis

What will the future look like? Increasingly, the U.S. electricity market is being built off of renewables, efficiency, and natural gas. Renewables, mainly wind and solar power, accounted for 50% of new utility-scale electricity generating capacity added in the U.S. in 2014—far more than the capacity added from coal and nuclear combined, and even edging out natural gas's 49%, according to data from the Federal Energy Regulatory Commission.

But threats to this progress exist. Congress has, for the time being at least, allowed the Renewable Energy Production Tax Credit to expire; meanwhile, other tax credits meant to help businesses and homeowners switch to renewables – most notably the 30% Solar Investment Tax Credit - are set to decrease or expire at the end of 2016. This threatens a slowdown in renewable capacity additions. Net metering requirements, renewable portfolio mandates, and energy efficiency standards are under attack in several states, though efforts to roll back such programs have met with limited success to date. And low oil and gasoline prices, as noted earlier, could put pressure on the markets for hybrids and EVs.

On the other hand, renewable energy costs continue to come down, making it more affordable for consumers to switch to renewable electricity. Energy storage is poised to take off; in 2013, California set a goal of 1.325 GW of energy storage by 2020. In June 2014, the EPA announced its landmark (and controversial) Clean Power Plan to significantly reduce carbon pollution in the U.S. power sector. And as noted in our homeowners' survey results, consumers continue to find increasing value in making the switch to cleaner, more efficient offerings.

As the economic, environmental, and social value proposition of clean-energy products and services intensifies, greater adoption by U.S. homeowners and consumers overall seems inevitable.

## About & Disclaimer



SolarCity® (NASDAQ: SCTY) provides clean energy. The company has disrupted the century-old energy industry by providing renewable electricity directly to homeowners, businesses and government organizations for less than they spend on utility bills. SolarCity gives customers control of their energy costs to protect them from rising rates. The company makes clean energy easy by taking care of everything from design and permitting to monitoring and maintenance. Visit the company online at [www.solarcity.com](http://www.solarcity.com) and follow the company on Facebook & Twitter.



Clean Edge, Inc., founded in 2000, is the world's first research and advisory firm devoted to the clean-tech sector. The firm delivers an unparalleled suite of clean-energy benchmarking services including stock indexes, utility and consumer surveys, and regional leadership tracking, providing Fortune 500s, clean-tech companies, investors, NGOs, and governments with timely research, trending analysis, and actionable insights. Managing director Ron Pernick and senior editor Clint Wilder are coauthors of the widely acclaimed business books *The Clean Tech Revolution* (HarperCollins, 2007) and *Clean Tech Nation* (HarperCollins, 2012). To keep abreast of the latest clean-tech trends, or for more information on the company, visit [www.cleannedge.com](http://www.cleannedge.com).

## Zogby Analytics

Zogby Analytics is respected nationally and internationally for its opinion research capabilities. Since 1984, Zogby has empowered clients with powerful information and knowledge critical for making informed strategic decisions. The firm conducts multi-phased opinion research engagements for banking and financial services institutions, insurance companies, hospitals and medical centers, retailers and developers, religious institutions, cultural organizations, colleges and universities, IT companies, and Federal agencies. Zogby's dedication and commitment to excellence and accuracy are reflected in its state-of-the-art opinion research capabilities and objective analysis and consultation. Learn more at [www.zogbyanalytics.com](http://www.zogbyanalytics.com).

**DISCLAIMER:** Information contained in this report is not intended to be investment advice or used as a guide to investing and no recommendation is intended to be made as to any particular company in this report.

## Appendix: A

### Survey questionnaire, including homeowner results

**Do you think that solar power today is more expensive or less expensive than the current retail rates provided by your electric utility?**

	More Expensive			Same	Less Expensive			Not Sure
	Overall	Much more	Smwht. more		Overall	Smwht less	Much less	
Homeowners (%)	<b>38</b>	12	26	18	<b>25</b>	19	6	19

**From your perspective, has solar energy become more or less affordable over the last three years?**

	More affordable			Same	Less affordable			Not Sure
	Overall	Much more	Smwht. more		Overall	Smwht less	Much less	
Homeowners (%)	<b>41</b>	8	33	32	<b>10</b>	7	3	17

**How often do you consider or investigate the environmental impact/sustainability of big-ticket items (cars, homes, etc.) when making purchasing decisions?**

	Homeowners (%)
Always	10
Most of the time	18
Sometimes	37
Rarely	20
Never	12
Not sure	3

**Of the following attributes, please rank which would have a “high impact” on your likelihood to install solar power on your home (rank all)**

	Homeowners (%)
I save money on my monthly electricity bill	64
I pay no upfront fees for installation and equipment	54
I lock in my electricity rates for 20 years	38
By using clean energy, I can reduce my environmental impact	35

**Are you more or less likely to consider environmental impact today (either of the product or the company that makes it) than you were 3 years ago?**

	More Likely			Same	Less Likely			Not Sure
	Overall	Much more	Smwht. more		Overall	Smwht less	Much less	
Homeowners (%)	47	16	31	44	4	2	2	4

**Which, if any, clean-energy products have you purchased?  
(Choose all that apply)**

	Homeowners (%)
At least 5 LED light bulbs	56
Energy Star-rated hot water heater (gas or electric)	36
Double or triple pane windows	28
Smart thermostat	21
Haven't made such a purchase	16
90% plus efficient gas furnace	14
Home energy audit or evaluation	10
Heat pump	9
Hybrid car	7
Battery backup power for my home	6
Solar energy system for my home	5
Electric vehicle	3
Not sure	6

**Which, if any, clean-energy purchases are you likely to make in the next year? (Choose all that apply)**

	Homeowners (%)
At least 5 LED light bulbs	27
Smart thermostat	12
Energy Star-rated hot water heater (gas or electric)	9
Double or triple pane windows	8
Hybrid car	7
Battery backup power for my home	7
Home energy audit or evaluation	7
90% plus efficient gas furnace	7
Solar energy system for my home	6
Electric vehicle	4
Heat pump	4
Not sure	26

**When making decisions around purchasing clean-energy products and services, which of the following are your primary motivators? (Choose up to two options)**

	Homeowners (%)
Saving money	82
Reducing my environmental impact	34
Fewer maintenance requirements because of product design, longevity, and efficiency	32
Using the latest and most innovative technology	9
Other	1
Not sure	8

## How important is renewable energy to America's energy future?

	Important			Not Important			Not Sure
	Overall	Very	Somewhat	Overall	Not that	Not at all	
Homeowners (%)	<b>87</b>	55	32	<b>7</b>	5	2	6

## Which energy sources do you believe are most important to America's energy future? (Pick up to Three)

	Homeowners (%)
Solar power	50
Wind power	42
Natural gas	33
Energy efficiency/savings	25
Oil	17
Hydroelectric power	17
Waste to energy	16
Nuclear	14
Geothermal power	10
Coal	8
Biofuels/biomass	7
Not Sure	12

**In recent years, federal tax credits have enabled both the solar and wind industries to expand, with solar and wind both more than doubling their generation over the past five years. Do you agree or disagree that the federal government should continue to offer such incentives?**

	Agree			Disagree			Not Sure
	Overall	Strongly	Somewhat	Overall	Somewhat	Strongly	
Homeowners (%)	74	39	35	12	6	6	14

**Please indicate if you agree or disagree with the following statement: *I would like to install solar panels on my home in the future.***

	Agree			Disagree			Not Sure
	Overall	Strongly	Somewhat	Overall	Somewhat	Strongly	
Homeowners (%)	60	23	37	23	12	11	17

**Overall are you satisfied or dissatisfied with your current electric utility company?**

	Satisfied				Dissatisfied				Not Sure
	Overall	Very	Satisfied	Smwht	Overall	Smwht	Dissatis- fied	Very	
Homeowners (%)	72	11	29	32	24	11	8	5	4

**When making investment decisions do you agree or disagree with the following statement: I consider the social and environmental impacts of the investment, as well as the financial return.**

	Agree			Neither agree nor disagree	Disagree			Not Sure
	Overall	Strongly	Smwht		Overall	Smwht	Strongly	
Homeowners (%)	52	17	35	23	17	9	8	8

**There is a new category of investing called 'impact investing' that offers financial as well as social and environmental returns, e.g. creating jobs and helping protect the environment. Please respond 'Yes' or 'No' to the following statements:**

*I would make this investment if it offers a potentially higher return than other options.*

	Homeowners (%)
Yes	74
No	7
Not sure	19

*I would make this investment if it offers a return that is at least as good as my other options.*

	Homeowners (%)
Yes	61
No	14
Not sure	25

***I would make this investment if it offers a slightly lower return than my other options.***

	Homeowners (%)
Yes	22
No	44
Not sure	34

**Some electric utility companies say that they should be allowed to charge rooftop solar owners a fee for connecting their solar systems to the grid. Many solar supporters say there should be no additional fee since they are increasing the use of renewables and reducing utility company costs during peak-use periods when demand is highest and electricity prices increase. Do you support or oppose electric utility companies being able to charge an additional fee to solar powered homes and businesses?**

	Support			Oppose			Not Sure
	Overall	Strongly	Somewhat	Overall	Somewhat	Strongly	
Homeowners (%)	<b>24</b>	8	16	<b>61</b>	18	43	15

**Some have said that the additional fee charged by electric utility companies to solar powered homes is a 'tax' on solar power. Do you agree or disagree that this additional fee is a 'tax' on solar power?**

	Agree			Disagree			Not Sure
	Overall	Strongly	Somewhat	Overall	Somewhat	Strongly	
Homeowners (%)	<b>53</b>	28	25	<b>26</b>	12	14	22

**How important do you think it is to the US economy to domestically manufacture solar energy systems, and solar panel components?**

	Important			Unimportant			Not Sure
	Overall	Very	Somewhat	Overall	Somewhat	Very	
Homeowners (%)	<b>79</b>	40	39	<b>10</b>	7	3	12

**How important is it to the future of the US for the nation to be a global leader in developing and deploying solar energy systems?**

	Important			Unimportant			Not Sure
	Overall	Very	Somewhat	Overall	Somewhat	Very	
Homeowners (%)	<b>78</b>	41	37	<b>9</b>	8	1	12

