2022 EnergySage Consumer Survey
Clean energy interest, awareness, and adoption

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Country’s leading renewable energy marketplace: Think of us like Kayak or Expedia. EnergySage is used by millions of homeowners, renters, and businesses to learn about and comparison-shop quotes for rooftop solar, batteries, community solar, and heat pumps.

Rapidly growing the industry: We make clean energy more accessible, transparent, and affordable for all; our online-first approach saves consumers over 20% on solar and contractors over 50% on customer acquisition costs.

World-class content: EnergySage is the most trusted and respected source for unbiased renewable energy content, insights, and market data out there.
EnergySage is uniquely positioned to track and analyze data across the clean energy landscape. This includes consumer demand and trends, real-time pricing, equipment availability and preferences, brand market share, and more for solar, storage, and other clean energy products.

To augment this data, EnergySage conducts installer-facing and consumer-facing surveys, allowing us to better understand the rapidly changing market dynamics.

EnergySage data and insights are frequently relied upon by top-tier journalists, government agencies, leading utilities, respected research groups, well-known brands and universities, and many others.

Visit energysage.com/data to download all EnergySage reports.
The team behind the survey

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2022 EnergySage Consumer Survey
Inflation Reduction Act

Consumer awareness and impact on decision making
IRA: impact of the policy on interest

Education gap: 56% of people are familiar with the clean energy incentives included in the IRA

- People who are familiar with the incentives are much more likely to express increased interest in cleantech
- People who are unfamiliar with the incentives are less likely to have plans to purchase cleantech products
IRA: impact of the policy on interest

People who are familiar with the incentives are much more likely to express increased interest in cleantech:

- Between 50% and 60% of respondents are more interested in solar, storage, EVs and smart panels as a result of the IRA.
IRA: impact of the policy on interest

People who are **unfamiliar** with the incentives are less likely to express increased interest in cleantech

- 60-70% of people who are unfamiliar with express no change in interest post-IRA for everything other than EVs
IRA: impact of the policy on purchasing timeline

Universally, two-fifths of people who are unfamiliar with the clean energy incentives in the IRA have no plans to purchase cleantech products, while only one-fifth of people who are familiar say the same thing.
Energy Use Awareness

Knowledge about and monitoring of home energy usage
Energy monitoring: knowledge

Understanding energy usage

- Two-fifths of people look at their energy usage once a month
  - Solar adopters look at their home’s energy usage much more frequently
  - 1 in 9 people don’t look at this at all

- Half of respondents are more interested in energy products due to rising electricity costs
Energy monitoring: value of more information

Understanding energy usage

- Respondents believe increased data and insights into energy usage would be valuable
  - Only 10% say they would not find increased insights valuable, compared to nearly 50% who would find it very or extremely valuable
Energy monitoring: how often usage is viewed

How frequently do you review your home's energy usage?

- Once a day: 7%
- Once a week: 11%
- Once a month: 39%
- A few times per year: 23%
- Once a year: 9%
- I never review my home's energy usage: 11%

How frequently do you review your home's energy usage? Solar adopters

- Once a day: 29%
- Once a week: 14%
- Once a month: 33%
- A few times per year: 16%
- Once a year: 8%
- I never review my home's energy usage: 1%
Energy monitoring: impact of rising electricity prices

Have changes in electricity prices over the last year impacted your level of interest in cleantech?

- Much less interested in clean energy products due to changing electricity prices: 5%
- Slightly less interested: 5%
- No change in interest level: 36%
- Slightly more interested: 33%
- Much more interested in clean energy products due to changing electricity prices: 21%

Nonadopters

- Much less interested in clean energy products due to changing electricity prices: 5%
- Slightly less interested: 6%
- No change in interest level: 39%
- Slightly more interested: 33%
- Much more interested in clean energy products due to changing electricity prices: 17%
Clean Energy Products

Consumer familiarity
Tech familiarity

People are more aware of clean tech

- Familiarity with different types of technology has increased across the board since we last fielded this survey in December 2020.
  - Small gains in familiarity for solar, larger for storage and heat pumps
Tech purchasing time frame

Clean tech is breaking into new markets

- In 2020, over half of people said they had no interest in purchasing an EV or a storage system
- In 2022, interest in buying those products has increased significantly
Purchasing Considerations

Motivations and barriers
Purchasing considerations: primary motivators

Price & quality drive decisions

- Price & quality are the two most important
- Domestic manufacturing & sustainability of the company up there too
Purchasing considerations: primary motivators

Saving money is biggest driver

- Across the board, the primary reason people say they're interested in (and ultimately decide to install) different products is to save money.
- Notable exception is that for storage, interest is driven by savings, but the primary reason for adoption is backup.
Purchasing considerations: primary barriers

Cost of tech is the biggest barrier

- The primary barriers boil down to cost:
  - People say they can’t afford the product
  - It is more expensive than they expected
  - Or they don’t think the investment is worth the cost
Consumer Journey

Purchase pathways for clean energy products
Consumer journey: entry points

Most common entry points are:

- Comfort control: smart thermostats (22%)
- Project or upgrade: energy efficiency audits/retrofits (13%)
- Garage: EVs (13%)
- Roof: solar (12%)
Consumer journey: next products purchased

By product, the most common follow-up purchase is:

- Solar is typically followed by storage
- Storage is typically followed by upgraded electrical panels
- Electric vehicle purchases are typically followed by EV chargers
- EV chargers are not typically followed by anything - people don’t seem to know where next to go in the journey
- Heat pumps are installed in conjunction with smart thermostats/energy efficiency measures, and are followed by storage
Common journeys: how to read the following charts

The following four slides cover the entry point into a clean energy product. The circled percentage reflects the percent of customers who begin their journey with said product.

Of the 22% of people who started with a thermostat, 23% of those people moved on to energy efficiency upgrades next, 29% of those people purchased an EV next, followed lastly by 31% of those people getting an EV charger.
Common journeys: through comfort control

22% of consumers start with a smart thermostat.

Notably, only 9% of customers who start with a smart thermostat take no further action.
Common journeys: through energy efficiency projects

- 13% of consumers start with energy efficiency audits or upgrades

1. Energy efficiency upgrades → Thermostats → Panel upgrade
   - 28% → 31%

2. Energy efficiency upgrades → EVs → EV charger → Solar
   - 14% → 40% → 42%

3. Energy efficiency upgrades → Heat pumps → Thermostats
   - 13% → 35%
Common journeys: through the garage

13% of consumers start with an electric vehicle.
Common journeys: through the roof

12% of consumers start with a solar panel installation

- 26% of consumers install solar followed by storage, then an EV or panel upgrade.
- 18% of consumers install solar followed by energy efficiency upgrades, then EVs.
- 15% of consumers install solar followed by EVs, then EV chargers.

2022 EnergySage Consumer Survey
Product Specific Breakdowns

Interest, adoption, and barriers
Products covered in this section

- Solar
- Storage
- Heat pumps
- Electric vehicles
- Community solar
Solar

- *Primary driver of interest:* To save money
- *Primary driver of adoption:* To save money
- *Primary barriers to adoption:*
  - 1) can’t afford it
  - 2) more expensive than expected
  - 3) need more time to research and decide
What are the top three reasons why you're interested in solar?

- To save money: 64%
- To help the environment with renewable energy: 42%
- To reduce my personal carbon footprint / emissions: 38%
- To minimize electricity outages: 34%
- Interest in receiving current financial incentives for solar: 27%
- To increase the resale value of my home: 19%
- To be on the cutting edge of technology with solar: 14%
- My friends or neighbors already installed solar: 10%
- Solar looks good on my home: 10%
Solar: drivers of adoption

What was the primary reason you decided to install solar?

- Save money: 31%
- Help the environment: 20%
- Gain a better understanding of renewable energy: 13%
- Avoid power outages: 12%
- Improve the aesthetics of my home: 7%
- Gain a better understanding of my electricity usage: 7%
- Increase my home’s resale value: 5%
- Be on the cutting edge of technology: 3%
- Receive tax incentives: 3%
Solar: barriers to adoption

Why did you decide not to install solar?

- I can’t afford it: 40%
- It is more expensive than I expected: 31%
- I need more time to research and decide: 30%
- I do not think the investment is worth the cost: 22%
- My property is not a good fit for installing solar panels: 16%
- My current utility meets my needs: 15%
- I do not plan on staying in my current house for very long: 12%
- I could not find viable financing options: 10%
- I do not like the look of solar panels: 9%
- I am generally uninterested in solar: 9%
- I do not have the permission to install it where I live: 8%
Storage

- **Primary driver of interest:**
  - 1) to save money
  - 2) resiliency
- **Primary driver of adoption:** backup power
- **Primary barriers to adoption:**
  - 1) need more time to research and decide
  - 2) can’t afford it
  - 3) more expensive than expected
### Storage: interest

**What are the top three reasons you're interested in storage?**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Interest (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To save money on my electric bills</td>
<td>42%</td>
</tr>
<tr>
<td>To make my home more resilient for future power</td>
<td>39%</td>
</tr>
<tr>
<td>To store energy from my solar panel system</td>
<td>29%</td>
</tr>
<tr>
<td>To reduce my energy consumption from the grid during</td>
<td>25%</td>
</tr>
<tr>
<td>To take advantage of tax credits/rebates</td>
<td>24%</td>
</tr>
<tr>
<td>To help the environment</td>
<td>21%</td>
</tr>
<tr>
<td>To reduce my personal carbon footprint / emissions</td>
<td>19%</td>
</tr>
<tr>
<td>To be on the cutting edge of technology</td>
<td>11%</td>
</tr>
<tr>
<td>Because I’m not eligible for net metering in my state</td>
<td>9%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>9%</td>
</tr>
</tbody>
</table>
Storage: drivers of adoption

What was the primary reason you ultimately decided to install a battery?

- For backup power during power outages: 24%
- To help the environment: 21%
- To save money using rate arbitrage: 20%
- For a way to store electricity from my solar panel system on-site: 16%
- To be on the cutting edge of technology: 8%
- To claim rebates/tax incentives: 7%
Storage: barriers to adoption

Why did you decide not to install a battery?

- I need more time to research and decide: 32%
- I can’t afford it: 31%
- It is more expensive than I expected: 25%
- I don’t experience enough power outages to make a...: 19%
- I do not think the investment is worth the cost: 13%
- I’m concerned about the safety of the battery: 12%
- I am not interested in home batteries in general: 12%
- My current backup power system (e.g. generator) meets...: 10%
- I could not find viable financing options: 10%
- Equipment availability: 9%
- I won’t be able to save money with a battery: 9%
- I do not like the look of home batteries: 5%
Heat pumps

- Primary driver of interest: To save money
- Primary driver of adoption: To save money
- Primary barriers to adoption:
  - 1) can’t afford it
  - 2) need more time to research and decide
Heat pumps: interest

What are the top three reasons you're interested in heat pumps?

- To save money: 47%
- To improve my indoor air quality / avoid fuel combustion: 29%
- To make my home more comfortable: 29%
- To help the environment with clean heating and cooling: 25%
- My existing HVAC system is/was towards the end of its life: 18%
- To electrify my home: 17%
- Other (please specify): 13%
- To be on the cutting edge of technology: 12%
- My existing HVAC system broke: 10%
- I was renovating my house: 9%
Heat pumps: drivers of adoption

What was the primary reason you ultimately decided to install heat pumps?

- To save money: 23%
- To make my home more comfortable: 19%
- To help the environment: 16%
- My contractor recommended it over other HVAC solutions: 11%
- To electrify my home as much as possible: 9%
- To be on the cutting edge of technology: 9%
- Other (please specify): 7%
- To claim rebates/tax incentives: 5%
Heat pumps: barriers to adoption

Why did you decide not to invest in heat pumps?

- I can’t afford it: 29%
- I need more time to research and decide: 29%
- My current HVAC system meets my needs: 22%
- It is more expensive than I expected: 21%
- I do not think the investment is worth the cost: 15%
- I am not interested in air source heat pumps in general: 14%
- I could not find viable financing options: 9%
- I do not plan on staying in my current house for very long: 7%
- I needed an HVAC replacement ASAP, and couldn’t find a...: 7%
- Other (please specify): 7%
- They aren’t compatible with my property: 6%
- I do not like the look of air source heat pumps: 6%
Primary driver of interest: To save money
Primary driver of adoption: To save money
Primary barriers to adoption:
  ○ 1) can’t afford it
  ○ 2) range anxiety
  ○ 3) charger availability
Electric vehicles: interest

What are the top three reasons you're interested in EVs?

- To save money: 43%
- To help the environment: 29%
- To reduce my personal carbon footprint / emissions: 26%
- To reduce necessary vehicle maintenance: 24%
- To take advantage of tax credits/rebates: 23%
- For a car with better performance: 15%
- For a quieter ride: 14%
- Other (please specify): 12%
- To be on the cutting edge of technology: 10%
- I like the way they look: 8%
- To electrify my commute: 8%
- My favorite car brand started building / offering EVs: 8%
Electric vehicles: drivers of adoption

What was the primary reason you ultimately decided to purchase or lease an EV?

- To save money: 32%
- To help the environment: 24%
- To be on the cutting edge of technology: 12%
- To electrify my commute: 12%
- For the convenience of home charging: 8%
- To claim rebates/tax incentives: 8%
- For a quieter commute: 5%

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Electric vehicles: barriers to adoption

Why did you decide not to purchase or lease an EV?

- I can’t afford it: 33%
- Limited driving range: 28%
- Charging availability: 28%
- My current car meets my needs / is not at the end of its life: 27%
- I’m happy with my current car and don’t want to switch: 23%
- It is more expensive than I expected: 22%
- I do not think the investment is worth the cost: 18%
- I need more time to research and decide: 16%
- I am not interested in EVs in general: 14%
- Car availability / wait times: 14%
- I could not find viable financing options: 8%
- I do not like the look of current EV models on the market: 7%
- Other (please specify): 6%
- I couldn’t find a used option: 5%
- I don’t drive: 3%
Community solar

- **Primary driver of interest:** To save money
- **Primary driver of adoption:** To save money
- **Primary barriers to adoption:**
  - 1) awareness and education
  - 2) perceived costs
  - 3) availability
Community solar: knowledge

People are unfamiliar with community solar

- Only 18% are very or extremely familiar
Community solar: interest

Interest in community solar is tepid

- Just over half of people express interest in community solar after reading our definition: *Large-scale solar installations that electricity customers subscribe to.*

Community solar subscriptions provide customers with energy credits that reduce electric bills, typically helping them save 5-15% annually.
Community solar: motivations

What is the most motivating factor for you to subscribe?

- **46%**: A 5-15% discount on your utility bill (financial savings)
- **18%**: Environmental benefits from solar energy (environmental)
- **12%**: None of the above
- **11%**: Supporting local solar projects / community involvement (community)
- **10%**: An upfront reward to sign up like a gift card of $50-$100 (award)
- **2%**: Other (please specify)

Saving money is the primary motivator

- Leading with the 5-15% discount on the bill is the most motivating factor to subscribe
Community solar: barriers and concerns

Costs and availability are primary concerns

- People are most concerned about the general costs and the availability of community solar in their area
- Notably, 1 in 5 people say they don’t really understand how it works

What if anything concerns you about subscribing to a community solar farm?

- General costs: 32%
- Availability in my area: 30%
- Compatibility with my utility company / current electricity plan: 22%
- I don’t really understand how it works: 21%
- Maintenance requirements: 20%
- The billing process / cadence: 14%
- I think it’s too good to be true: 14%
- Cancellation terms: 13%
- I don’t have any concerns about community solar: 11%
- Impact on the environment: 10%
- Providers’ reputations: 10%
- Other (please specify): 3%

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Community solar: drivers of adoption

Only 2% of respondents subscribe to community solar

- Two thirds of respondents say the primary driver of adoption was to save money
- People selected which project to subscribe to based on the flexibility of the subscription and the operational time of the project
Methodology

Audience details...

- Nationwide panel, fielded October 2022
- 1,000 complete responses
- Primary decision makers in the household
- Ages: 30-65
- All geographies
- No filtering for income, housing type, ownership vs. renting
Age of respondents

- 63% of respondents are between 30 and 45
- Majority of adopters across all categories are in the 40-45 age range
  - Community solar is the only notable exception

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### Income of respondents

#### Income level of adopters

- Income of respondents reflects national trends (median ~$75k)
- Income skews right across all types of tech adopters
- Community solar is the notable exception with 60% having incomes of <$125k per year
  - Only 40% of adopters of other tech are in the same income category
Thank you!

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