

**CLEAResult**<sup>®</sup>

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**2024**

Energy Efficiency  
Outlook Report

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## Introduction

The year 2024 is set to be a game-changer for energy efficiency. In the US, the landmark [Inflation Reduction Act \(IRA\) is funneling billions of dollars](#) into state-led energy efficiency programs, while Canada has responded with its own [CAN\\$80 billion clean energy investment plan](#). This will be the year we begin to reap the benefits of aggressive federal investments that are directing unprecedented funds into lowering energy consumption and costs for homes and businesses.

This extraordinary new support is creating tremendous opportunities for states, territories and utilities, but getting complex energy efficiency programs right won't be easy.

In this report, we dive into the challenges programs are likely to experience and share actionable advice to help overcome them. Our team of experts identified these top energy efficiency trends for 2024:



**Heat pump adoption** will grow, but improving customer education and addressing barriers to entry will be critical



A rise in **personalized energy advice and concierge services** will help customers who are “spoiled for choice” take their next – or even first – step.



New-and-improved technology will enhance **data collection and savings estimates** for commercial and industrial (C&I) projects.



Greater efforts to **break down barriers** for low- and moderate-income (LMI) customers will help to cut costs and drive greater participation.



In some states and territories, innovations in **gas energy efficiency** – not just electrification – will contribute significantly to energy reduction goals.

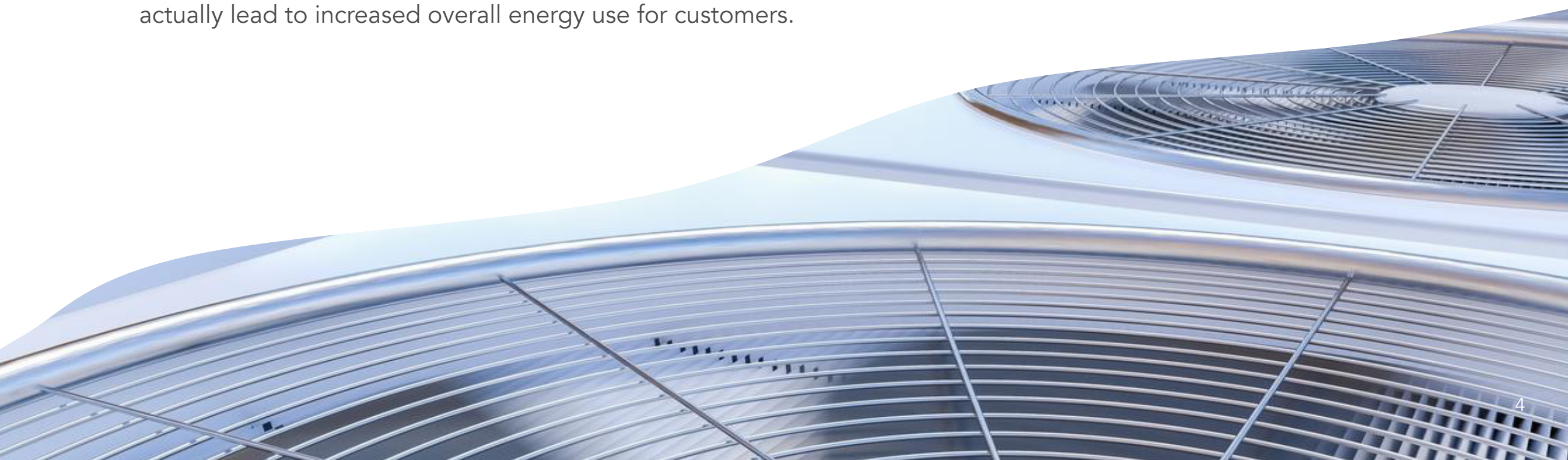
## Understanding the heat pump hype

Heat pumps are enjoying the spotlight right now and, in many cases, are increasingly being recognized as an indispensable tool to lower greenhouse gas emissions and combat climate change. In September 2023, the U.S. Climate Alliance announced its goal to [quadruple the number of heat pump installations](#) in member states by 2030. California is also [announcing aggressive goals](#) for the same timeframe. And the IRA's Home Efficiency Rebate program will fuel further adoption by providing households with [savings](#) for heat pump installation.

Their potential benefits are clear: They can cut a household's carbon [emissions by as much as 40 percent, with the highest reductions found in the Pacific and Northeast regions](#). Due to evolving heat pump technology, the belief that they were only suitable for warm climates is now old news. New models can now perform effectively [even in cold climates](#). In fact, leading the charge on installations is currently New England, with Maine holding a track record of installing [100,000 heat pumps](#) since 2019, and declaring ambitious plans for continued growth.

Most importantly for many households, they also have the potential to save significant energy and money. Homes in some states can save [as much as 30 percent, or \\$1,000 annually](#), on their energy costs by installing a heat pump. But not all heat pump installations are created equal, and these savings are not a given.

While heat pumps may offer some customers substantial energy savings when installed correctly, their full potential is only realized when coupled with complementary home improvements and appropriate installation. Failure to implement the appropriate improvements and settings may actually lead to increased overall energy use for customers.



Making the most significant impact on energy efficiency and customer satisfaction demands careful consideration and planning to integrate this technology into a whole-home approach.

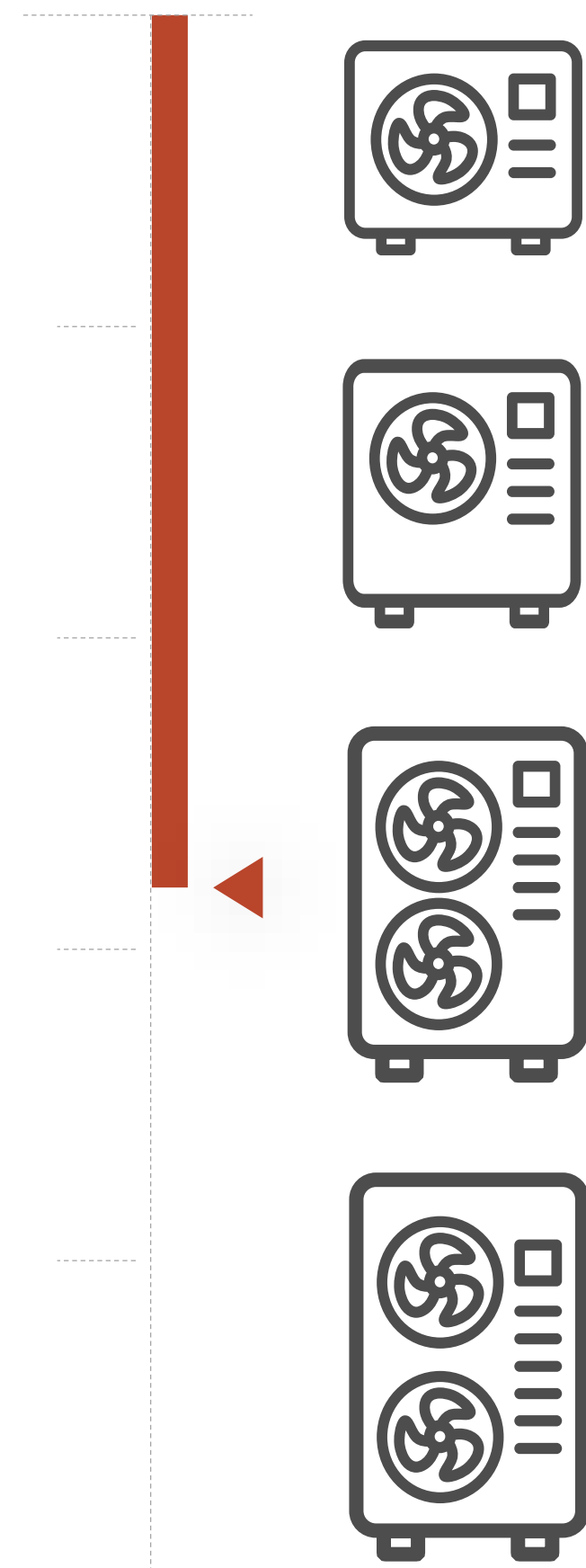
This whole-home approach is based on the Building Performance Institute's (BPI) philosophy of "[house as a system](#)" (or home performance), which has influenced practices in home weatherization, whole-home energy audits and HVAC installation for years. "House as a system" is a building science principle that recognizes homes as unique, interconnected systems, requiring a thoughtful and customized approach. As energy efficiency programs shift away from lighting to HVAC and building envelope measures, the importance of home performance continues to grow. And it is vital for heat pump installation.

Homes with similar characteristics may require very different heat pump installations based on factors such as insulation, layout, heating/cooling locations, window conditions and duct status. For example, a heat pump attempting to regulate temperature in a poorly insulated home cannot work as easily, using more energy, and potentially leading to higher costs. In some cases, [prioritizing insulation or other weatherization upgrades](#) may make more sense before or alongside heat pump installation.

Proper sizing is also a key consideration, taking into account the layout and size of the home, local temperature trends, occupant habits, and more. [Bigger is not always better](#). A heat pump that is too small may work overtime and result in high electricity bills and lower customer satisfaction; an oversized one may simply result in the customer paying more upfront. No two households are the same, and beneficial heat pump installation rests on these differences.

It is imperative to educate contractors and installers on the need to adopt this holistic "house as a system" approach to prevent subpar performance and lost savings.

### Size matters for heat pumps



Proper sizing is a key consideration. An undersized heat pump struggles to maintain comfort in extreme weather, while an oversized one may experience short-cycling – turning on and off too frequently – which reduces efficiency. Optimal performance is achieved when heat pumps run for longer periods without frequent shutdowns.

## Take Action

### Invest in workforce training

The biggest action utilities and energy efficiency programs can take now is to continue investing in workforce development. Many programs have heat pumps as an existing incentivized measure and more will join in 2024. Key skilled trades like electricians and energy auditors are a vital cog in ensuring these programs are a success. Federal investment in clean energy workforce development is coming but utilities, energy programs and other stakeholders already promoting this approach must lead the way, connecting new contractors with BPI and other training resources to ensure our electrified future is also an energy-efficient one.

### Prioritize the whole-home approach in program design

Utility and state-led programs must embrace this approach and focus on maximizing energy savings and comfort, not just the number of heat pumps installed. Some homes may not be a perfect fit for heat pumps or require additional investments to reap the benefits, but a thoughtful home-by-home approach will leave more customers satisfied with their decision and their energy savings.

## Advisory and concierge services to guide the way

Energy efficiency will play a pivotal role in nationwide efforts to achieve [net zero in the US](#) and in [Canada](#), and home energy rebate programs are expected to offer an expanding variety of [tax credits and incentives funded by the IRA](#), along with demand response and electric vehicle offerings. But this wealth of choice can pose a challenge for prospective energy savers looking to identify their best course of action.

Technology platforms can fill this gap for some customers, but a subset of homeowners and business owners will always require more personal guidance through their energy efficiency journey. This is where one-on-one coaching or concierge services comes in.

Energy advising, concierge or coaching services are often provided by a third party on behalf of a utility to help customers understand and navigate the various program choices and energy decisions available to them. This account management approach is already commonly used for larger C&I portfolios, but it can also offer similar benefits for small businesses and residential customers.

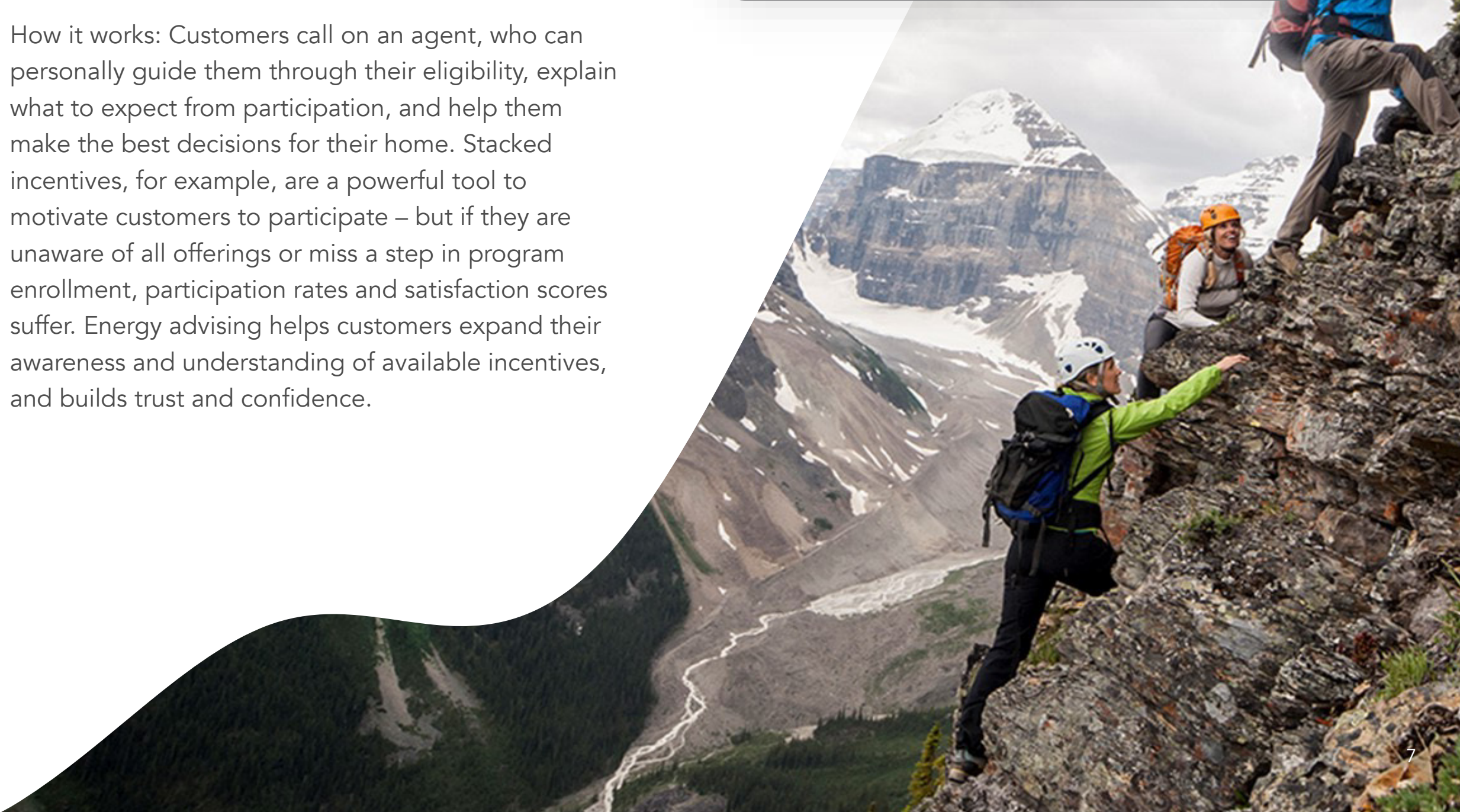
How it works: Customers call on an agent, who can personally guide them through their eligibility, explain what to expect from participation, and help them make the best decisions for their home. Stacked incentives, for example, are a powerful tool to motivate customers to participate – but if they are unaware of all offerings or miss a step in program enrollment, participation rates and satisfaction scores suffer. Energy advising helps customers expand their awareness and understanding of available incentives, and builds trust and confidence.

It can also break down language barriers – one client program provides support in seven languages – or issues such as a lack of email/internet access. Until now, disadvantaged and hard-to-reach communities have been disproportionately [left behind when it comes to energy efficiency programs](#). Offering a reliable, people-centric service like this can help them to discover additional energy-saving opportunities, improving customer satisfaction and encouraging repeat participation.

### How concierge works

An agent guides customers through:

- Their eligibility
- What to expect from participation
- Stacked incentive opportunities
- The steps in program enrollment
- Support in multiple languages



## Take Action

### Blend human support with technology

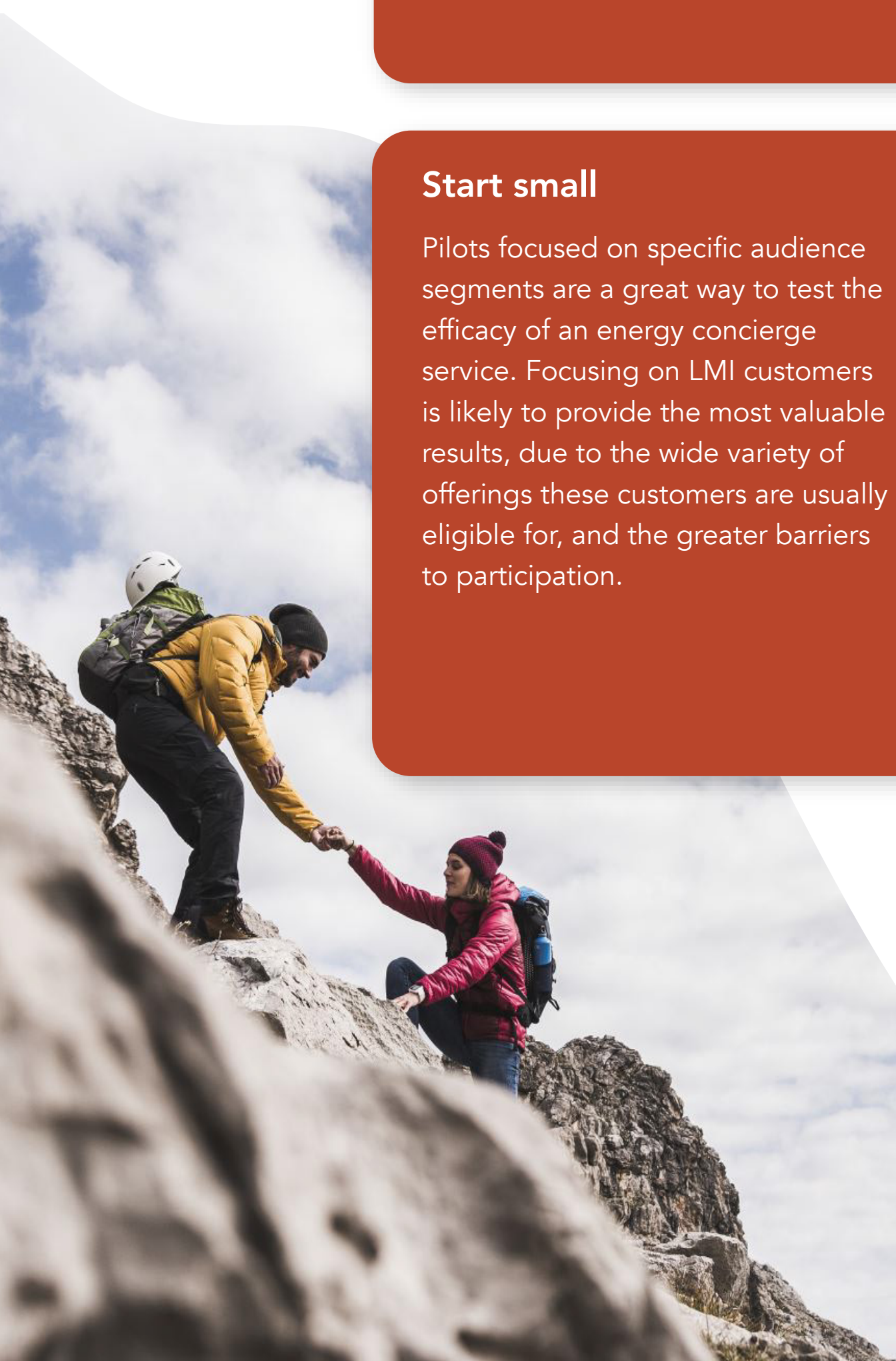
An energy concierge is not meant to replace program marketing or rebate portals. Equally, artificial intelligence tools in the utility space are on the way and offer exciting potential for more personalized energy recommendations. But there will always be customers and situations that benefit most from the human touch. A person-centric advising service is one of several indispensable tools to help utilities assist all their customers on their energy efficiency journey.

### Start small

Pilots focused on specific audience segments are a great way to test the efficacy of an energy concierge service. Focusing on LMI customers is likely to provide the most valuable results, due to the wide variety of offerings these customers are usually eligible for, and the greater barriers to participation.

### Work together with state-led programs

We are actively advocating for states and utilities to collaborate and even potentially share costs for these advisory services. Now is the time to initiate conversations to understand exactly what will be available to customers and how to help them maximize their energy savings. At a minimum, creating resources for customers to understand and be guided toward state-led programs should be on every utility's radar.





## Greater demand for C&I project transparency

Program managers and decision-makers are increasingly demanding greater transparency in their C&I programs to gain a better understanding of completed projects' impact. Pre-application submissions often lack essential data, such as the customer's current or past participation in other programs within the portfolio. After installation, savings claims typically rely on averages or calculated models rather than real-world measurements. In combination, these factors leave us with an incomplete picture of the actual energy savings achieved.

This need for better data is driving the development of innovative technologies, and in the upcoming year, we anticipate greater opportunities for utilities to integrate these technologies into their programs, providing them with accurate impact information and more meaningful insights.



### Pre-application

Before a project is even designed, a wealth of information is required to optimize outreach and customer recruitment. The pressure to remain cost-effective often means that a broad-based outreach strategy is considered a luxury. Truly effective customer targeting strategies require analysis of real estate and business data to understand the market and align program opportunities with ideal candidates. Additionally, using data from other program participants can significantly enhance coordination across programs, reveal new savings opportunities, and elevate the overall experience for the customer. A robust process for collecting information at this pre-project stage is essential.

Technology advancements are now making this process more accessible and scalable. Effective and user-friendly reporting software like our proprietary [CLEAResult ATLAS™ Insights](#) analytics engine ensures potential opportunities are accurately identified and qualified, allowing for more sophisticated program implementation. We can show utilities where their dollars can have the biggest impact and provide optimized data at every step of the utility customer's journey.

With this data, program managers can better assess the health of program outreach efforts. We refer to this as the Program IQ. An assessment of the Program IQ empowers our program teams to refine outreach plans, improve forecasting accuracy, and enable cross-program coordination. For example, CLEAResult ATLAS™ Insights helped one of our program teams realize they were off-track at the end of Q1 last year. They made adjustments, and by the end of Q3, the program was not only back on track, but it ultimately surpassed its original goals for the program year.

## Post-completion

In 2023, we observed a growing interest in programs designed to deliver actual measured savings rather than relying on deemed or calculated estimates, and we expect this trend to continue in 2024. Measured savings are not only more accurate, they provide insights into the actual time of day energy is being saved. This information is crucial, for example, to effectively address gaps in electricity generation caused by portfolios heavily reliant on clean but intermittent energy sources like wind and solar.

Historically, the measured savings approach was only cost-effective on the largest projects and faced scalability challenges. But this is changing as

the cost of sensors goes down and [advanced metering infrastructure \(AMI\)](#) sees widespread adoption. Coupled with savings analysis software powered by artificial intelligence (AI) and machine learning (ML), they have paved the way for scalable measured savings methodologies for a larger population of smaller projects.

For utilities, resource planning is becoming increasingly complex. In 2024, a growing number of states will require analysis on electrification and clean energy as well as the time and location of demand-side resources like energy efficiency. To meet this growing challenge, utilities will need technology to enable greater transparency.



## Take Action

### Put a premium on data

As demand for energy efficiency as a resource increases, the importance of both the quantity and quality of data your program collects is heightened. AI tools and real-time reporting on savings may be powerful assets for program decision-making, but they are only as good as the data you input.

### Stay current on technology trends

New capabilities, tools and partners in the energy efficiency space become available each year. Pilots offer a great opportunity to test drive new technology solutions, data-driven outreach methods or partnerships that could unlock better C&I energy efficiency programs. A forward-looking approach ensures that utilities are prepared to harness the potential of evolving technologies for more effective program management and decision-making.



## Removing barriers for LMI households

Households earning less than 30 percent of the state median income are more likely to be energy impoverished, and bear a [disproportionately high energy burden](#) (14 percent compared to an average of 3 percent for LMI households). And yet LMI programs make up just [13 percent of US utility energy efficiency program spending](#). Upcoming IRA-funded programs will funnel billions of dollars toward addressing this disparity and providing help to more LMI households. But for these efforts to be effective, utilities must break down participation barriers.

One major barrier is paperwork. Rebate programs typically require lengthy forms or the submission of

financial documentation (like tax returns or pay stubs) to verify customer eligibility. While it makes sense to ensure every dollar is spent appropriately, some customers will distrust utility or government programs, worry about privacy, or simply may not want to share their information. Other customers may not have access to the information required. This layer of verification also adds additional costs for utilities or states running LMI programs, from additional staff needed to gather and review documentation to the technology tools provided to help customers through the process.

### Customer eligibility spectrum



More barriers/burdensome



Less barriers/burdensome

To address this sticking point, we expect to see greater adoption of self-attestation as a means for determining eligibility for LMI programs. This means customers simply state that they meet the criteria and answer a few questions about their income to move forward. This removes the burden for customers and administrators to find, submit, review and verify multiple documents.

Self-attestation hasn't seen wide adoption in utility programs in the past. LMI programs tend to offer higher incentives, and utilities want to ensure the right customers benefit.

However, as an eligibility method, self-attestation or self-certification is used for many government programs. [Official guidance from the Department of Energy](#) for IRA home energy rebate programs encourages states to allow applicants to establish their eligibility through a variety of means “including categorical eligibility (enrollment in recognized low-income programs), documentation of income, and self-attestation.”

Categorical eligibility involves aligning with similar programs that require the same information for eligibility. For instance, if a customer is eligible for the Supplemental Nutrition Assistance Program benefits or Medicaid, they can also be deemed eligible for an LMI utility program. While we hope to see widespread adoption of self-attestation, categorical eligibility is a step in the right direction.

Another option is blanket eligibility, whereby an entire town or ZIP code is considered eligible for certain incentives. While not every customer in the area would otherwise be eligible, the percentage of qualifying customers is high enough to justify the blanket approach and a significant marketing push.

The argument against self-attestation is the risk of customers lying or taking advantage of increased incentives, and concerns about overall program savings not holding up to evaluation. We believe the doors that it opens for increased LMI participation would offset these drawbacks. Self-attestation frees utility or implementer staff to focus more on what’s important – driving awareness and helping customers – while opening doors for more customers to participate in energy efficiency programs.



## Take Action

### Keep an eye on state-run IRA programs

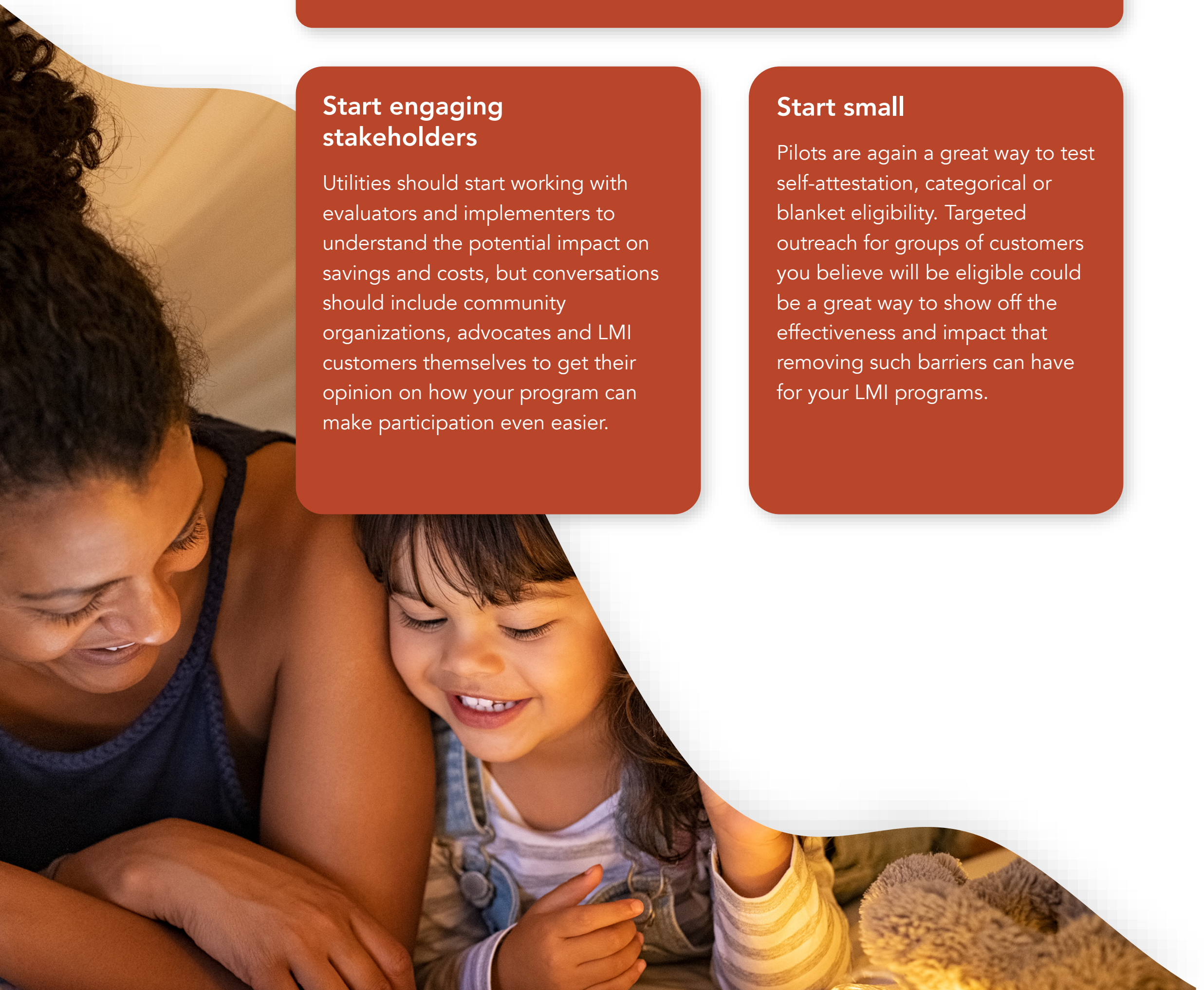
We expect to see some states take advantage of the DOE's guidelines on eligibility and self-attestation, and following and measuring the success (from a participation and financial standpoint) of those programs will be key to barrier-free programs really taking off.

### Start engaging stakeholders

Utilities should start working with evaluators and implementers to understand the potential impact on savings and costs, but conversations should include community organizations, advocates and LMI customers themselves to get their opinion on how your program can make participation even easier.

### Start small

Pilots are again a great way to test self-attestation, categorical or blanket eligibility. Targeted outreach for groups of customers you believe will be eligible could be a great way to show off the effectiveness and impact that removing such barriers can have for your LMI programs.



## Innovation in gas energy efficiency

While electrification is expected to play a huge role in decarbonization efforts this year, in some regions, electrification may not be the most cost-effective option due to [significant variations in natural gas prices](#). In states or territories where natural gas is very inexpensive, a move toward electricity does not make financial sense for customers.

This can be especially true for low-income customers who cannot afford new appliances, HVAC, or electrical panel upgrades. In many areas and communities, gas efficiency programs are still a necessary focus for helping customers lower their energy use, save money, and reduce their carbon footprint.

In 2024, we expect to see the growth of innovative technologies and pathways that hold great promise for substantial gas savings:

### Gas Absorption Heat Pumps (GAHPs)

GAHPs are not new technology, and are used more widely in Europe, but have recently gained more attention and traction in North America. Like other heat pumps, GAHPs are extremely efficient and [exhibit much higher performance than conventional gas equipment](#), such as boilers. Piloted in some of our programs, GAHPs have proved to be an effective measure for gas savings, particularly as traditional gas-fired boilers and furnaces face increasing baselines.

FortisBC, one of our clients, has integrated GAHPs into its commercial portfolio and collaborated with us on a [Best Practices Guide](#) to help educate contractors, commercial businesses and utilities. We are confident that GAHPs will have a strong position in gas energy efficiency programs for years to come.



## Hydrogen

Many gas utilities are investing in research and development around hydrogen as both a generation and a local power resource. Blending hydrogen into natural gas pipelines could reduce emissions while using the existing infrastructure. Addressing significant market changes like these requires a shift in customer expectations, and gas efficiency programs will play a vital role in engaging and educating customers.



## Fuel transition

Approximately 5 million homes across the US still rely on propane, kerosene and other delivered fuels for home heating or water heating. The volatile pricing and a shrinking market for installers and servicers pose challenges for these customers, particularly for those in lower income brackets. Propane and home heating oil are, respectively, 19 and 40 times more carbon intense than natural gas. If able, utilities should quickly transition vulnerable customers away from these higher polluting delivered fuels. While it doesn't align directly with national goals for electrification, reducing delivered fuels will contribute significantly to overall decarbonization and energy efficiency efforts.



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## Take Action

### Monitor energy prices

As prices continue to change for multiple fuel options, so will customers' habits. Track pricing trends in your region or territory to ensure that existing plans are pursuing the most cost-effective courses for consumers.

### Advocate for gas efficiency programs

Some states and municipalities are taking aggressive approaches when it comes to natural gas, with some even banning new gas hookups, pipelines or gas in new construction. In other areas, legislation is being passed to prevent these bans. It is important for utilities to advocate for gas energy efficiency in all regions as a key part of our overall energy transition journey.

## Final thoughts

The energy efficiency industry is set for a transformative 2024. Amidst diverse regional dynamics, utilities are urged to reimagine programs, adopting new technologies while cultivating closer relationships with customers. Motivated by a heightened collective focus on energy consumption and boosted by IRA dollars, forward-facing utilities can implement innovative programs that drive substantial energy savings, and pave the way for a more sustainable and resilient energy future.





# Questions?

We'd love to hear from you!



[clearesult\\_bd@CLEARResult.com](mailto:clearesult_bd@CLEARResult.com)



[www.clearesult.com](http://www.clearesult.com)



6504 Bridge Point Parkway, Suite 425  
Austin, Texas 78730, U.S.A.



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