



→ How to advance energy affordability with an integrated utility strategy

By Val Jensen, ICF

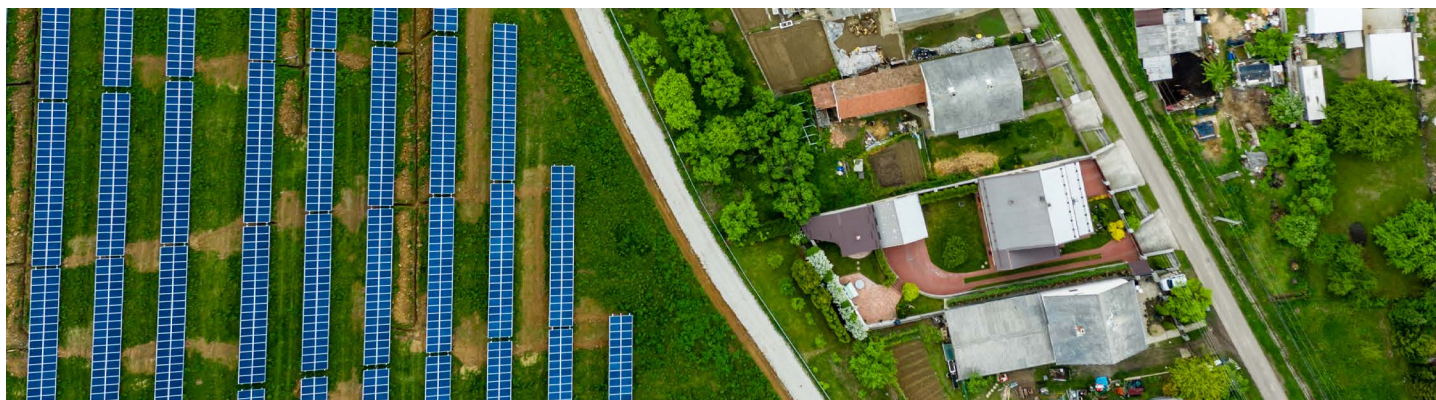
Executive summary

Utilities are only as strong as the communities they serve, which makes achieving energy affordability more than just the right thing to do—it makes it a business imperative.

Taking on an issue as complex and multifaceted as energy affordability requires utilities to develop an integrated strategy that brings together teams from across the organization. To create comprehensive community-building strategies, utility executives must break down organizational silos to pull together threads of electrification, transportation, flexible load management and energy efficiency, resilience, government and regulatory affairs, and financial assistance programs. Or stated another way, energy affordability is an aim that needs to be woven into every aspect of the utility's planning and operations.

Why should utilities make the effort? An integrated approach to energy affordability allows utilities to achieve a triple bottom line that strengthens disadvantaged communities, reduces carbon emissions, and bolsters the utility financially. But it requires a shift in thinking that places justice and affordability issues at the heart of utility strategy—and requires strong and committed leadership to make it happen.

This paper makes the case for a bold, whole-of-utility approach to energy affordability, sharing examples of promising pilots and outlining concrete steps that utility leaders can take to meet the moment and set the stage for a more just, equitable, and prosperous future.





A focus on energy affordability in the overall push for energy justice

The tone has been set at the national level. On his first day in office, President Biden signed the [Executive Order on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government](#), which orders the federal government to pursue a comprehensive approach to advancing equity for all. This whole-of-government approach organizes agencies around a common goal that can be translated into actionable policies designed to address longstanding disparities.

One example is the [Justice40 Initiative](#), a plan to deliver 40% of the overall benefits of climate investments to disadvantaged communities. The Department of Energy's Office of Economic Impact and Diversity will implement Justice40, facilitating partnerships between federal agencies, states, and local communities—and signaling, in doing so, that environmental justice is a clear and measurable priority from the top down.

Within the context of environmental justice, which the Environmental Protection Agency [defines](#) as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies,” the concept of energy justice (also known as “energy equity”) has gained purchase. Energy justice, with its focus on energy systems, introduces new challenges, considerations, and opportunities for utilities—demanding that they do more to address issues of affordability and energy burden.

The need to define the problems and measure progress toward solutions is paramount. While energy justice is a complex and multi-layered goal, we know that energy burden exacerbates the myriad challenges that disadvantaged communities face—and it is one aspect of energy justice that utilities can take on and use to reorient the design and delivery of their customer programs.

The utility of tomorrow—and today—needs to answer to a higher standard, and leaders that take a whole-of-utility approach to the issue of energy affordability can make a real and lasting impact.

Energy affordability is good for communities—and a business imperative for utilities

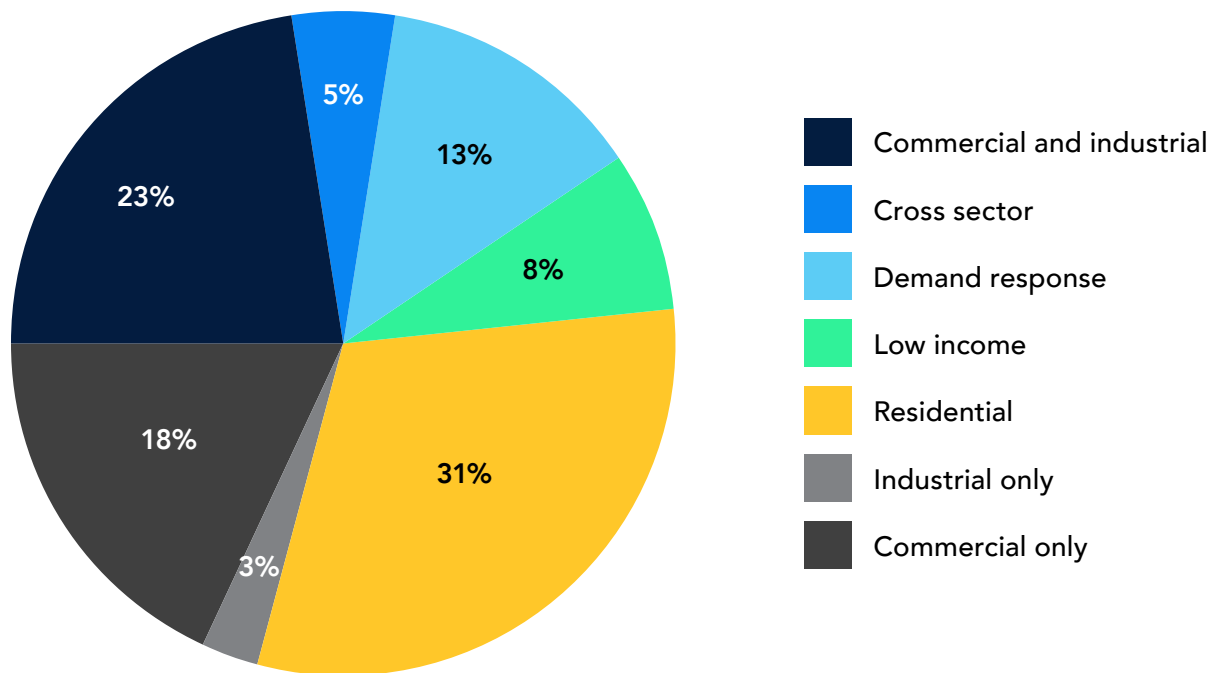
Low-income households face an energy burden three times higher than other households. While an energy burden is considered “high” when a household must spend more than 6% of its income on energy, [low-income households on average spend 8.6%](#). About 27% of U.S. households—36 million in total—earn below twice the federal poverty level. However, these households, which tend to aggregate in disadvantaged communities, use [more than 30% of the electricity consumed in the U.S.](#)

High energy burdens can threaten a household’s ability to pay for energy and [force tough choices](#) between paying energy bills and buying food, medicine, or other essentials. It’s an unsustainable situation that contributes to decreased health, financial instability, and many other challenges in disadvantaged communities.

By addressing energy affordability, customers can afford other essentials. This leads to improved health, which increases the ability to earn income. Dwellings also tend to be safer because the members of low-income households don’t have to resort to [unsafe coping tactics](#), such as trying to heat homes with dangerous propane heaters.

Undeniably, it is easier for more affluent customers to make the investments needed to reduce energy burdens and so they tend to participate to a greater extent in utility programs that require customer investment. While utility low-income energy efficiency programs help customers in disadvantaged communities lower their household energy use and reduce their carbon emissions, these programs represent a small slice of the overall pie: In a typical year, less than 10% of U.S. energy efficiency spending is dedicated to low-income programs.¹

2019 U.S. electric DSM expenditures by customer class



Source: http://cee1.org/sites/default/files/2021-09/2020_AIR_Final.pdf

¹ There is no exact percentage, given that different sources define low-income spending differently. For example, the [Consortium for Energy Efficiency’s 2020 State of the Efficiency Program Industry Report](#) attributes 8% of 2019 U.S. electric DSM expenditures to low-income programs..



But the question remains: What's in it for utilities?

Energy affordability is a key way utilities can contribute to solving the greater societal issue of equity for disadvantaged communities. A utility can't pick up and move its service territory. The healthier the community a utility serves, the healthier the business. There are four principal ways to translate energy affordability to improved bottom-line outcomes:

1. A more progressive approach to addressing energy justice issues can help position a utility for more favorable regulatory treatment. Utility leaders recognize that simply achieving a set number of low-income home weatherizations will soon be insufficient to demonstrate equity, and by designing more thoughtful programs for low-income customers, they can build support for investment and improve regulatory relations.
2. Efforts to modernize and move the grid to zero carbon likely will make utility bills more expensive, although as customers switch to electric transportation options, their total energy burden could decrease.¹ Low-income households are already struggling to keep up, and rising prices would result in more customers who can't pay. An increase in uncollected accounts means higher system costs spread across fewer paying customers, which is unsustainable for utilities and the communities they serve. The reputations of utilities caught in this cycle will suffer. When this occurs, regulators—under pressure politically and from ratepayers—often make the cost-recovery process more challenging.
3. Less efficient energy use and higher CO₂ emissions among low-income households will make it more difficult to reach utility, state, and federal clean energy targets. In low-income communities, homes average **25% to 60% more energy usage** per square foot than higher-income neighborhoods. With the right policies in place, low- and middle-income customers can cut their energy use by 20% or more, which would cut 48 million tons of CO₂ per year, according to [a study from the Environmental Defense Fund](#).
4. Utilities that don't take a meaningful stance to solve energy affordability and justice issues risk harming company culture, employee morale, and retention because employees increasingly view energy justice as a core way utilities can benefit society. Similarly, managers may struggle to recruit new employees because top talent increasingly seeks employers that act with strong corporate purpose.

² As customers electrify their buildings and transportation, the amount spent on electricity is likely to increase. However, this increase likely will be offset by reduced spending on natural gas and gasoline.



A utility can't contribute to community sustainability without ensuring its own financial stability. Enhanced energy affordability improves the financial stability of a utility and communities by reducing the number of unpaid bills and ensuring system costs can be spread across more customers.



Practical ways to assess and enhance affordability in utility operations

To advance energy affordability within your utility, consider the following recommendations.

1. Focus on community development.

This is the biggest challenge and opportunity, and it should be at the heart of every utility's strategy. Poverty tends to congregate, so developing specific tactics to support the most disadvantaged communities will create more success in the long run than a customer-by-customer approach.

But to succeed, utility executives must break down silos within their organizations. The departments overseeing energy efficiency programs, billing and payment, and electrification efforts must work together to effectively plan. Government and regulatory affairs groups will need to help pave the way for new ideas that emerge. Philanthropy managers should participate to align philanthropic spending with development projects that serve key disadvantaged communities. Supply chain managers can take part in ways that include changing policies to require sourcing from local, diverse suppliers in disadvantaged areas. Human resources teams can focus on hiring labor from these communities.

2. Develop a strategic approach to partnerships and regulatory and policymaker relationships.

Utilities need allies to move the needle on energy affordability. Success requires strategic partnerships with environmental advocates, community support NGOs, state attorneys general offices, and more. Such groups can help utilities produce ideas that fit community needs, earn trust, develop relationships with community leaders, and advocate for necessary regulatory and policy changes.

The topic of regulatory and policy change is central to achieving energy affordability. The core regulatory system in most states was designed for the early 20th century energy landscape. Many well-intended rules prevent utilities from offering customers options and programs that would best help disadvantaged communities. Many of the

options listed here might not be allowed by utility regulators in your service territory today, which is why it's imperative to start working on breaking down barriers to new pathways now.

3. Establish specific equity metrics and goals.

You can't manage what you don't measure, so it's important to establish equity priority outcomes, metrics, baselining, and tracking—and create specific energy affordability goals that the organization can rally around. ICF offers robust equity analysis capabilities along with an equity insights and engagement program that helps utilities gather targeted customer intelligence, tailor engagement initiatives, and optimize and field test new program strategies for disadvantaged households. This step is foundational; proper equity analysis gives teeth to a utility's energy justice ambitions.

Of course, assessment of equity should encompass the utility's entire footprint, including energy efficiency, distributed energy resources, transportation electrification, disconnect and deposit policies, outage restoration priorities, rate design, philanthropic activities, payment mechanisms, and more. Yet another reason to engage an experienced partner to help you take a whole-of-utility approach to energy justice and affordability.

4. Reduce the energy burden in disadvantaged communities through efficiency programs designed for them.

It's worth stating again: Less than 10% of U.S. energy efficiency spending is dedicated to low-income households. While some states have pushed utilities to spend more on income-eligible customers, there are [ample untapped opportunities](#) to design innovative programs that incentivize energy efficiency upgrades in low-income households or rental units while ensuring they remain affordable. Such programs can even bring income into disadvantaged communities if the work to perform the upgrades is awarded to community-owned small businesses.



5. Develop clean energy and electrification plans with disadvantaged communities in mind.

Many low-income households don't own the roofs over their heads, meaning conventional solar ownership and leasing options are not on the table. However, community solar projects can potentially supply energy at a lower cost to people in disadvantaged communities. These projects generate low-cost power when they take advantage of the variety of federal, state, and local incentives. It's important to note that the utility's rate structure might not allow low-income customers to be offered a lower rate, which means that might need to be part of the advocacy strategy, too. For more on this topic, [read ICF's four steps to deliver equitable clean energy solutions](#).

Utilities view EVs as a win-win because they create more use of their core product and help reduce carbon emissions and harmful air pollutants. However, many people in disadvantaged communities don't own vehicles or don't live in a home where they can charge an EV. Typical EV incentives and vehicle charging infrastructure do them little good. Expanded access to clean public transportation in the form of electric buses and trains could serve their economic interests and those of utilities.

6. Change the way the utility conducts billing and collection.

Today, utility customers are billed in arrears for the electricity they used a month ago. There is no visibility for customers who struggle to manage a tight budget. Utilities can experiment with new options such as prepayment systems or micro billing, in which customers pay smaller increments more often. Some regulators also allow utilities to estimate a customer's annual bill and bill them a flat monthly rate.

7. Focus philanthropy efforts on support for disadvantaged communities.

Most utilities have a formidable annual philanthropy budget, but the pie is sliced into many pieces to satisfy many people. If a utility focused its resources on one core issue, such as community development, it could make a real difference and boost its corporate culture by rallying employees around a single, critical cause. As noted above, a utility's philanthropy arm should have a seat at the table with other planning groups so that it can best align philanthropy efforts with the overall strategy to advance energy affordability.

As you advance energy affordability, expect challenges

There are five key challenges utilities should anticipate and begin to plan for as they execute a strategy to advance energy affordability.



Regulatory. Some of the recommendations listed above are not currently allowed, but existing regulations and institutions helped create systemic energy inequity and so it should not be a surprise that rules and policies must be revised to achieve energy affordability. Some utilities may struggle with adversarial relationships with regulators and key policymakers. Lifting disadvantaged communities is a priority for these officials, and utility efforts to make energy more affordable for those disadvantaged communities provide a golden opportunity to constructively work with these key stakeholders.



Trust. Many disadvantaged communities mistrust institutions based on a history of mistreatment. Strategies to lift these communities must be viewed as long-term investments. Utilities should think big picture, as they do when they develop massive infrastructure projects over the course of a decade.



Cost. As with most complex problems, the solution will not be cheap. Utilities need to decide from where they will marshal the resources in the short term to launch an effective plan. It's important to remember that, in the long run, it is more affordable to produce a sustainable energy affordability solution than to keep replenishing LIHEAP (Low Income Home Energy Assistance Program) funds in perpetuity. The promise of increased affordability is a great place for utilities to start when seeking permission for a new program from regulators and policymakers.



Prioritization. Every institution faces limits to its bandwidth. For most utilities, energy affordability is not a front-and-center issue owned by any one group. Adding to the lack of focus, community activists are not as well organized as environmental advocates in pushing support for their agenda. In the void, utilities will need C-level leadership to make energy affordability a priority in terms of budgeting, rallying employees, and setting and achieving goals. However, if proper prioritization is established at the top, employees and budgets will coalesce around the effort, building momentum and culture.



Partnership. Energy inequity is a broader societal issue for which many institutions in the public and private sector share responsibility. This is not exclusively a utility problem, and the solution need not rest solely on utility resources. However, if they don't want to bear the full burden, utility leaders must work with other organizations and funders to attract resources that allow community development efforts to succeed at scale.

Despite the challenges, utilities are making strides and leading by example

Starting to address an issue as large and complex as energy affordability can be daunting. A holistic strategy might not emerge overnight, but utilities can start to act with early-stage planning, pilot programs, and experiments. Here are three projects that bring the recommendations above to life and can serve as a model for utilities across the country.

Bronzeville, Chicago, Illinois

In Illinois, Commonwealth Edison launched its Community of the Future program in 2016 to support the South Side Chicago community of Bronzeville with a multilayered initiative to address community resilience.

Community of the Future used a forward-thinking, long-term approach to, as T&D World put it in an [October 2020 report](#), “make Bronzeville into one of the greenest, most connected, most sustainable communities in the nation.”

The initiative is developing everything from a community microgrid to science, technology, engineering, and math (STEM) programming for community members. The project began with the Bronzeville Community Microgrid, which offers greater energy resilience to the community. ComEd also began efforts in 2019 to launch the Bronzeville Film Festival and the Bronzeville Renaissance Mural, to honor the artistic and cultural history of the community.

T&D World captured ComEd’s strategic focus on long-term community development: “From its earliest days, Community of the Future has been about empowering the residents of Bronzeville, focusing on leveraging community strengths to improve quality of life and enhance sustainability of local institutions.”

Before launching the initiative, ComEd had to secure regulatory approval. A lesson for other utilities considering similar programs is that the effort focused on a single community. Starting small and proving the effectiveness of a program to drive community development and energy equity can be a gateway to broader success.

It’s also important to note that ComEd worked to develop a deeper understanding of Bronzeville before unleashing a suite of “solutions.” Only after working with the community did it understand the importance of art and culture to Bronzeville, and that these attributes could be harnessed to create a more popular, successful program.

Basalt, Colorado

In the rural town of Basalt, Colorado, the U.S. Department of Energy’s National Renewable Energy Laboratory (NREL) partnered with local electric cooperative Holy Cross Energy to test an [autonomous energy grid that matches generation and demand](#) intelligently and in real time—allowing teachers and county workers who live in the Basalt Vista Affordable Housing Community to exchange energy and services while respecting the reliability limitations of the local grid.

The homes in Basalt Vista Affordable Housing Community are net zero energy—producing as much energy as they use—and each one is designed to also serve as a self-contained microgrid. NREL’s software and algorithms optimize how the resources are balanced, allowing Holy Cross Energy to understand how distributed energy resources can be integrated into our energy system going forward to the benefit of customers, communities, and the grid.

Johnston Square, Baltimore City, Maryland

Baltimore Gas & Electric (BGE) joined forces with Baltimore City government and community stakeholders [to install 198 smart LED streetlights](#) in response to community requests. These streetlights create safe and walkable streets and are helping to spur an economic renaissance in the 110-acre neighborhood of Johnston Square.

The initiative also benefits the 276 children who attend Johnston Square Elementary School, providing them with a safer way to travel to and from school.

In addition to promoting safety, smart LED streetlights are more efficient than their predecessors, which translates to cost savings for the city government. As part of BGE’s broader Connected Communities initiative, the Johnston Square project demonstrates the positive impact that utilities can have at the local level when they focus on community development and create programs that reflect what residents and businesses actually need.

Developing a community-by-community approach is difficult but necessary. A trusted adviser can help utilities cultivate a deeper understanding of programs that could be effective in specific communities, or create strategic approaches to broadly advancing energy affordability through expert analysis, quantitative tools, and applied science. The right analysis and data allow utilities to develop programs with the greatest chance at success and improve program performance after launch.

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Val is a specialist in the energy industry field with over 40 years of experience. As senior vice president for strategy and policy at Exelon Utilities, he oversaw technology and business strategy, supported policy, and coordinated strategy development for Exelon's operating utilities. As senior vice president for customer operations at Commonwealth Edison (ComEd), Val managed the development and delivery of customer-facing products and services, including the company's \$250 million annual portfolio of demand response and energy efficiency programs.

Val is also a senior fellow with the [ICF Climate Center](#). In this role, he provides compelling research and objective perspectives on a wide range of climate-related topics to help advance climate conversations and accelerate climate action.



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