Top learnings from the Fall 2025 Customer Energy Solutions Leadership Council

Insights from utility customer energy solutions leaders

By Brenen Riggs, Claire Mills

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At the E Source Fall 2025 Customer Energy Solutions Leadership Council, utility leaders shared current priorities and challenges across their portfolios of demand-side management (DSM), distributed energy resources (DERs), and emerging technologies. Here are some of the trends that surfaced and some resources that can help you find solutions for your own utility.

Commercial and industrial (C&I) demand response (DR)

Participants talked about challenges with DR programs targeting C&I customers. Some utilities succeeded with commercial customers but not industrial ones, or the other way around. Others found it difficult to predict how much load reduction they would get from their C&I programs.

Here are some solutions we heard:

- *Treat the C&I segments separately.* Design distinct DR programs for each customer segment instead of combining them. This approach lets utilities design programs and engagement strategies to the unique strengths and needs of each segment.

- *Prioritize automatic DR.* AutoDR is where a facility sets up its energy management system to respond automatically during a DR event. Automated systems create more dependable load reductions.
- *Take advantage of Advanced Metering Infrastructure (AMI).* We heard from one utility that uses AMI to verify event responses, even in facilities without internet access.
- *Bring customer outreach and enrollment in-house.* Move these functions from third-party vendors to internal teams for better service and more engagement. This also gives utilities more control over customer relationships and program performance.
- *Involve cross-functional teams in DR.* Engage traders, engineers, and key account teams in program design and execution. Working together across departments strengthens program performance and customer experience.
- *Continuously vet third-party vendors.* Evaluate vendors' ability to deliver new controllable loads before expanding DR With the emergence of many new controllable devices, not all vendors can deliver DR program expansion.
- *Involve key account managers in DR.* Key account managers can prepare large business customers for peak demand events and interruptible programs.

Here are some resources that can support your C&I DR program:

- For a broader discussion of DR portfolio design considerations from us, check out How do utilities develop a demand response portfolio?
- Our report How AutoDR can improve your C&I demand-response portfolio has recommendations on incorporating automatic DR into your C&I programs.
- For an in-depth report on DR aggregators, see Understanding demand response aggregators: Opportunities and challenges for utilities.
- Our report Prepare your key account customers for peak demand events can help you communicate effectively with large business customers participating in interruptible programs.
- We also had a session at E Source Forum 2025 where panelists discussed what makes a successful C&I DR program: Designing C&I DR programs your customers will love.

Heat pumps and fuel-switching

Participants talked about challenges with heat pumps and fuel-switching. Many utilities are dealing with unwanted customer behavior around heat pumps—some utilities revealed issues like nighttime setbacks causing the system to revert to less-efficient electric resistance heating. Managing trade ally networks (TANs) is a challenge, as improper installation can undercut energy savings.

Here are some of the solutions we heard about:

- *Adopt fuel-neutral targets.* Some utilities switched from fuel-specific targets to fuel-neutral targets like greenhouse gas (GHG) reductions. They found opportunities for new measures.
- *Advise customers early on their heat pumps.* One participant saw that customers rarely changed their settings for a new heat pump after the initial installation. By educating customers early, the utility saw more savings.
- *Develop your TAN.* Clear certification requirements and ranking contractors by performance were top

strategies for developing TANs.
- *Conduct inspections of installed equipment.* That way, you can make sure installations meet quality standards and verify the real-world energy savings. This information can inform your TAN and program design.

Here are some resources on these topics:

- In 2024, we hosted an online exchange that touched on these topics for gas utilities: Gas utilities want to decarbonize: Can electrification play a role?
- For more information on the differences between the expected and actual performance of electric equipment, check out our report Equipment performance is essential but isn't something you can predict from a label.
- We had a session at E Source Forum 2025 on heat pumps, where panelists discussed the benefits and drawbacks of different types: Goldilocks and the Three Heat Pumps: electric, dual-fuel, and gas.

Demonstrating the value of DSM and DERs to stakeholders

Some participants found it difficult to treat customers as a resource, which made it harder to get support for DSM and DER programs. Internal divisions within utilities also made it challenging to show the value of customer resources to others inside the company. Some expressed that, because of internal utility structures dividing teams, it was hard to show the value of customer resources to internal stakeholders.

Here are some of the solutions they shared:

- *Include customer resources in integrated resource planning models.* This appropriately values the resources customers bring while strengthening the case for DSM and DER programs.
- *Collaborate with power supply and planning teams.* This can highlight the impact of customer programs on resource planning. A few utilities spoke about accomplishing this through organization restructuring, like moving customer energy solutions under power supply.

Increasing customer engagement through program design

Participants voiced challenges in engaging customers in existing programs. We heard about common barriers to program participation like language access, affordability, contractor unfamiliarity with equipment installation, and customer trust of the programs.

Some solutions we heard include:

- *Make sure program materials in languages other than English are reviewed for accuracy.* One participant mentioned that their employee resource group assisted in this effort by identifying staff who spoke different languages and could verify the translated material before sending it to customers. Direct translations from English often miss important context or sound strange to native speakers. Employee groups or community action agencies (CAAs) can review these materials to make translations more accurate.

- *Develop relationships with community action agencies.* Working with CAAs can improve program participation. Marketing programs at community events can increase customer awareness of programs. Underserved groups often trust CAAs to help them work with the utility.
- *Engage with TAN.* Contractors are often the face of the work in DSM programs. Creating good relationships with the contractors in your TANs can improve the quality of installed measures. This leads to a better relationship between the customer and the utility. Contractors who are comfortable installing new technologies like heat pumps can refer customers to utility programs and encourage participation.

Here are some of our resources on these topics:

- This exchange from June 2025 discusses must-have strategies to help trade allies succeed: Elevating your trade ally partnerships and engagement.
- This report touches on some key ways to engage trade allies for program success: Engagement strategies for building a strong trade ally network.
- Trade allies are important in midstream programs too; this report discusses best practices for engagement in midstream programs: Trade ally engagement and incentive design in midstream programs.
- A session at E Source Forum 2025 discussed ways to expand DSM programs to include more low- to moderate-income customers: Empowering communities: Expanding LMI services in DSM programs for health, safety, and savings.

Strategies to create successful pilots

Utilities struggle with creating pilots. Here are some tips we collected from participants.

- *Design pilots for specific customer segments (e.g., grocery stores or big-box retail).* This lets you focus on testing and learning, which improves pilot outcomes and scalability.
- *Use alternative funding methods.* Some participants shared that they've used marketing, customer information budgets, or grant funding to run pilots. This can help avoid regulatory barriers. Other participants shared that having a dedicated pilot budget allows them more flexibility in pilot design.
- *Conduct stakeholder interviews.* Interviewing peer utilities can help identify successful pilot program design. Interviewing customers before designing a pilot can provide insight into successful delivery methods.
- *Shorten pilot lengths to assess feasibility.* Limiting pilot lengths helps utilities assess program design feasibility and impact before scaling. But this approach doesn't work as well when testing technology.

We had a session at E Source Forum 2025 on pilot design that shared recent examples—Top Gun: Developing the best pilots.

Reexamining cost-effectiveness

Utilities spoke about how declining cost-effectiveness in residential programs is creating a need for new measures and future-proof portfolios. Traditional cost-effectiveness models often conflict with decarbonization goals. Rising equipment costs also make it harder to achieve cost-effectiveness. Because of these challenges,

some participants said it’s getting more difficult to convince regulators that their programs are valuable. Participants discussed new measures they want to try in their programs, including:

- *Lighting controls.* Lighting controls are a good measure to claim savings from lighting as baselines change. Smart controls like luminaire level lighting controls can allow for continued savings by optimizing already-installed LED
- *AMI data.* Participants agreed that they wanted to use AMI data to enhance their DSM portfolios, but many questioned what to do with all the data. There are options to use AMI data in targeting and recruiting customers, enhancing existing programs (like home energy reports), enabling new programs with real-time feedback, quality assurance and control of contractor work, and enhancing the accuracy of evaluation, measurement, and verification through Measurement and Verification 2.0.
- *Advanced technology for energy audits.* Energy audits are a longstanding way to create energy savings, but they can be time- and labor-intensive. Participants discussed ways to avoid attending every audit in person. For example, they suggested using digital twins to model energy use, drones for home energy assessments, and expanding virtual audits for commercial buildings.
- *Novel heat pump designs.* Participants discussed adding incentives for variable refrigerant flow heat pumps and natural gas heat pumps, as well as using a hydronic additive to improve efficiency.
- *Carbon capture.* A few gas utility participants shared their interest in piloting carbon capture technology with the goal of reducing GHG The two technologies suggested were carbon capture with flue gas economizers and exothermic heat recovery and direct air capture systems.
- *Energy storage and grid integration.* Energy storage and grid integration continue to be topics of discussion within the CES Participants mentioned vehicle-to-grid technology and thermal energy storage technologies as points of interest. Participants are curious about ways to use all available DERs to increase grid resiliency.

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