



Affordability Starts in Operations

How better workforce execution can help utilities reduce avoidable cost without compromising safety, reliability, or service

White Paper



Residential
Prices Up

31%

2026 Forecasted
Price Increase

5%

Infrastructure
Investment, 2024

\$60.2^B

Summer
Demand Growth

224^{GW}

Affordability Pressure

According to the U.S. Energy Information Administration, the average U.S. residential electricity price rose 31% from 2020 to 2025, and is forecast to rise another 5% in 2026. Meanwhile, the Edison Electric Institute (EEI) reports that investor-owned electric companies invested \$60.2 billion in distribution infrastructure in 2024.

Affordability is among the most pressing issues facing utilities today. Customers are paying more for electricity, and it's become a hot-button topic, especially in the upcoming midterm election cycle.

At the same time, the demands and strain on utility infrastructure continue to grow. NERC forecasts North American summer peak demand growth of 224 gigawatts and winter peak demand growth of 246 gigawatts over the coming decade. This is to say nothing of the huge energy demands expected from data centers being built across the United States. To maintain service as demand increases, utilities will need to continue investing in grid modernization, system hardening, capacity for new load, and the workforce required to execute that work.

The Real Opportunity is Operations

These are not competing priorities; they can't be. It's just as important to provide safe, affordable power as it is to maintain the grid and infrastructure necessary to deliver that power. Nor are the simple solutions sufficient—it's no more reasonable to suggest "customers can just pay more" than it is to suggest "utilities can just spend less."

Utilities have different degrees of control over the factors that shape the cost of service. Infrastructure requirements, financing conditions, material costs, load growth and regulatory obligations often fall outside a utility's direct control. Operational execution, however, presents a more immediate opportunity to reduce friction and improve how effectively work is executed and completed.

Ultimately, the real question is not about how much utilities are spending. It is how much unnecessary time, movement, duplication, and delay can be removed from the work those investments require.



“It doesn’t necessarily mean doing less. It means getting more risk reduction from every dollar we spend.”

Chris Kelly
VP of Market Strategy, Arcos

What Affordability Includes

For the purposes of discussing affordability in utility operations, let’s align on a definition of “affordability”: Delivering safety, reliability, resilience, and customer outcomes at the lowest total cost.

That definition doesn’t suggest spending less or doing less work. Meeting that definition requires being intentional and strategic about executing the work that must be done. As the definition suggests, affordability is bigger than any single major outage, investment decision, or capital expense. For utilities, it has at least three interconnected dimensions:

Customer affordability considers the burden energy costs place on households and communities, including monthly bill costs, payment assistance needs, and equity. The American Council for an Energy-Efficient Economy (ACEEE) reported in 2024 that a quarter of low-income households spend more than 15% of income on energy bills.

System affordability considers the investment required to maintain and expand a safe, reliable and resilient grid, including infrastructure, capacity and modernization. The U.S. Department of Energy’s 2024 Grid Modernization Strategy reflects this challenge, identifying affordability alongside reliability and resilience as priorities as the grid adapts to growing demand and changing system needs.

Operational affordability considers how effectively utilities convert people, time and materials into completed work—and how much avoidable friction is introduced along the way.

Utilities cannot fully solve customer affordability through operational efficiency alone. But operations is one area where utility leaders can exert meaningful control: Reducing unnecessary waiting, duplication, administrative effort and rework, while improving visibility into how resources are used.



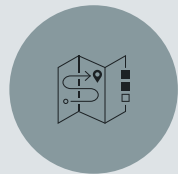
Prioritization

what work gets done



Crews

who gets deployed



Information

how fast it moves



Execution

how efficiently it happens



Reporting

what it costs



Rate Case

the bottom line

Affordability Starts Before the Rate Case

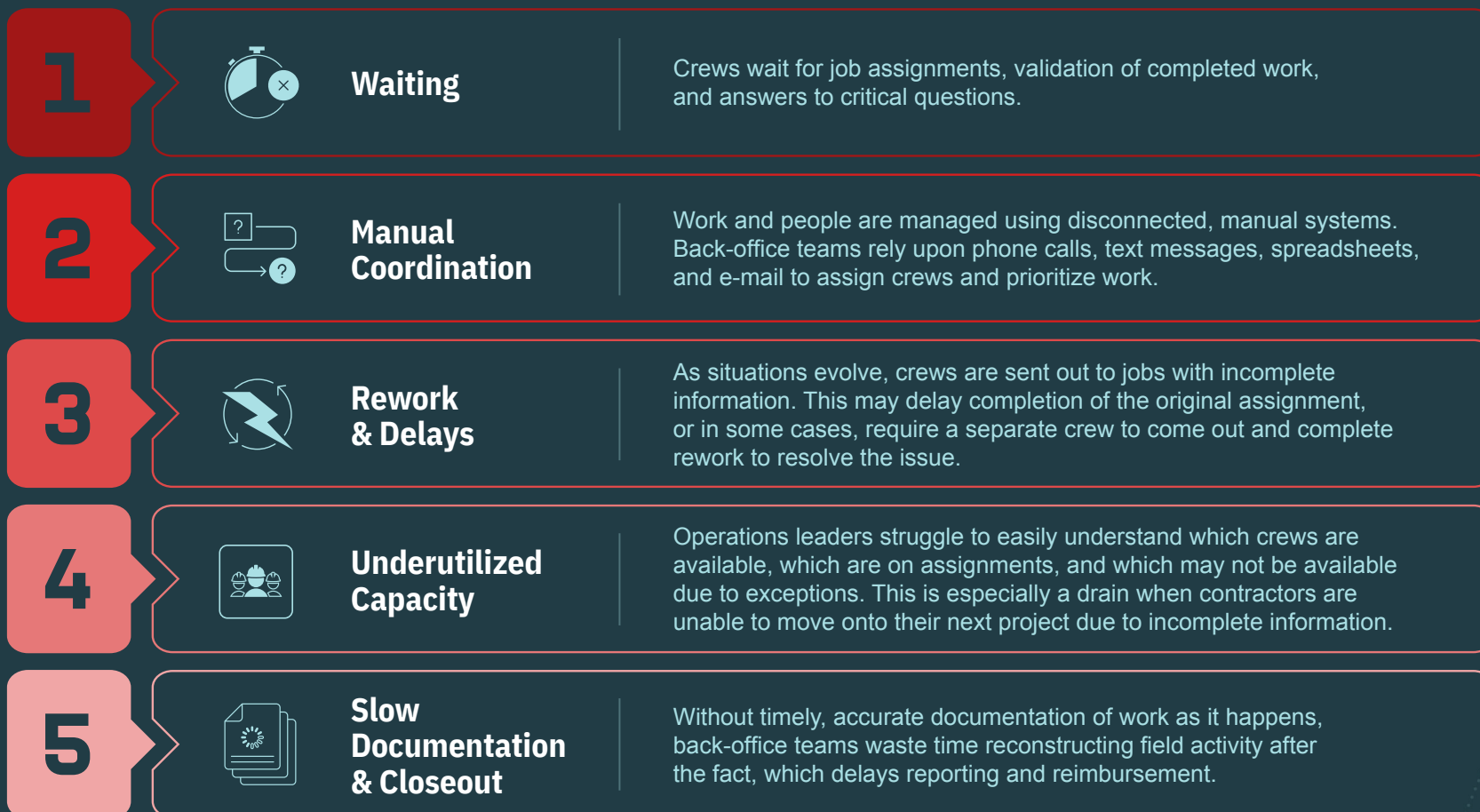
Today, the affordability conversation tends to start at the end, with rate cases and regulatory filings. That rate case will reveal costs, but by the time costs surface in a regulatory filing, they've been shaped by decisions made much earlier. How has work been prioritized? Have crews and contractors been deployed as effectively as possible?

Is information moving through the organization at top speed? And perhaps most importantly, have operations remained agile and responsive as daily work becomes emergency response, and conditions demand change?

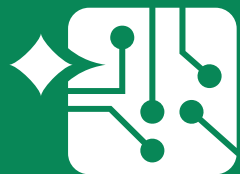
To effectively meet the many challenges around delivering affordable energy, utilities need to understand where those challenges begin. Affordability surfaces every time a line worker lifts a wrench, or a mutual aid crew arrives on site to support a major outage.

Ultimately, affordability starts in operations.

Five Key Friction Points



Every utility operates with its own process, but there are often five separate areas where inefficiency leads to time and money wasted. These items may not individually jump out when reviewing costs at the enterprise level. Yet when these inefficiencies are repeated across many jobs, crews, contractors, and emergency events, costs accumulate without a clear corresponding impact on safety, reliability, or customer service.



The Technology Difference

Much of this operational friction happens simply because an organization cannot see it in time to act, which is where technology plays a critical role. A connected workforce means that opportunities to improve efficiency are visible while decisions can still be changed. A dashboard that explains yesterday is not enough; the technology must support current decisions and active workflows.

The operational choices made every day by a utility are where costs are shaped. Making affordability actionable therefore requires more than knowing what the utility spent. Leaders need to see how effectively people, information, and time became completed work.



“We understand that we can’t just have a one-size-fits-all technology solution. We also can’t afford to have too many variations.”

Mike Cline
Director of Operational Systems, **American Water**



Emergency Restoration: Affordability Under Pressure

The average U.S. electricity customer experienced approximately 11 hours of interruption in 2024, with major events accounting for roughly 80% of that duration, according to the U.S. Energy Information Administration. When the power is out, especially as a result of a storm or other emergency, urgency escalates. Major outages compress enormous amounts of workforce coordination, spending and decision-making into a short period of time. Emergency restoration requires speed alongside expertise, and every decision is only as strong as the information available to inform it.

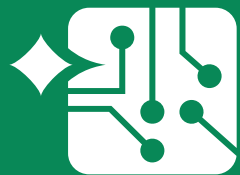
Whatever the cause, unplanned outages can exponentially increase the impact of inefficient operations on affordability. Because time is of the essence, it can sometimes seem easier to work fast than to work smart. But imagine the impact—if a delayed job assignment creates an hour of paid waiting for a crew, a similar delay across hundreds of open jobs multiplies that expense. With higher rates paid to contractors and mutual aid crews, the impact is greater as well.

“Big storms happen and utilities may lose tens of millions of dollars because they can’t account for what happened—not because they didn’t do it, but because their processes were not sound.”

Peter Ashley
Senior Delivery Principal, **Slalom**

During a storm or other emergency outage, decisions that may normally unfold over days are compressed into hours or minutes. The workforce quickly expands in an ever-changing environment where a literal shift in the winds can transform field conditions and prioritizations.

This doesn’t mean that utilities should mobilize fewer crews, or slow down the rate of restoration. Instead, it means that the same processes that will help reduce operational friction during daily work, or blue sky days, are exponentially more important during emergency restoration. As efficiency increases, so does the speed and control over the restoration process.



The Technology Difference

Digital workflows can materially improve both the speed and visibility of restoration operations. Having a current real-time view of all available native, contractor, and mutual aid resources in a single place helps inform the best decisions around work assignments. Digital check-in at the staging site means that crews can be ready to go into the field much more quickly. As areas are restored, updates are sent to back-office teams in real time, meaning community communication becomes much clearer and more immediate. And as the scenario winds down, more complete digital documentation is available to justify costs and simplify required cost recovery and other reporting.



“Maintaining process during blue sky is what makes the storm go smoother.”

Debra Googins
Process Improvement and Standardization, **Avangrid**

The Affordability Check

1

Is operations prioritizing the right work?

This is not a “one and done” process, even on a daily basis. It should be a continuous examination that evolves as circumstances change. Work should be constantly aligned and realigned to current system needs, the highest areas of risk, and customer impact.



2

Are available crews being dispatched deliberately?

Visibility is key to understanding which crews are available, their skills and qualifications, and their capacity. That's the foundation for making sure crews are sent to the right work at the right time.



3

Can you act on change before it becomes expensive?

Change is constant in utility operations. Efficiency depends on absorbing it quickly—identifying blockers and shifting field conditions early enough to adjust before they drive unnecessary overtime, union grievances, or wasted materials.



4

Can we show our work?

Your high school algebra teacher was right: show your work. Operational records should clearly capture what was done, what it cost, and—especially during emergency response—crew activity, key decisions, expenses and timing. Building that picture without unnecessary data diving helps reveal the path to more affordable operations.

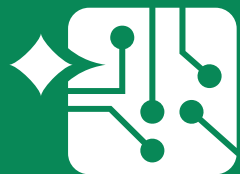


Reaching a level of confidence in affordable operations starts with understanding what is happening day in and day out in your utility, framed around some key questions that can help illuminate the ways in which your operations are already working efficiently, and the gaps that should be addressed to lower unnecessary spend and effort.

An Operations Scorecard

The answers to these questions are critical, but it's impractical to track and manage against every possible metric available in the operating record. Instead, align internally on four to six metrics that best reflect efficient operations, and work consistently to optimize those metrics. These examples can act as a starting point, an “operational scorecard” that can be expanded with greater detail and additional metrics.

Metric	Example Data Point	Measurement Period	Business Consequence
Crew wait time	Avg. minutes/crew/shift	Weekly/event	Labor and contractor cost; restoration velocity
Avoidable Overtime	OT hours tied to waiting/reassignment	Monthly/event	Labor cost and workforce capacity
Rework	% of jobs requiring return visit	Monthly	Crew capacity, materials, completion time
Event arrival to deployment	Avg. elapsed time	Per event	Restoration readiness and paid staging time
Completion to documented closeout	Avg. elapsed time	Weekly/monthly	Reporting, reconciliation and cost visibility



The Technology Difference

Many utilities struggle with “dark data”—useful information trapped across disconnected systems. Bringing crews, work, and data into a single real-time view helps teams make faster, more informed decisions and improve efficiency, especially during major outages. ComEd, for example, reduced an eleven-step crew availability and location process to four steps by centralizing information.

There is no universal “good” number. Start with a credible baseline, assign ownership, and track sustained improvement.



“If you have a process in place with accurate handoffs and records of who’s doing what and when, getting reimbursement for large events is much easier.”

Peter Ashley
Senior Delivery Principal, **Slalom**

Seven Steps to Operationalize Affordability

Turning affordability into an operational discipline is not about rethinking all major processes at once. In fact, trying to solve too many problems at once can create more friction than it removes. Instead, utilities should start with a specific workflow, establish what good looks like, and use measurable results to build from there.

1. Define the operating standard.

Start with a shared definition and understanding of what affordability means for operations: Delivering the required safety, reliability, resilience, and customer outcomes at the lowest responsible total cost. With that as a guide, you can identify outcomes that should not be compromised, which can help identify where avoidable operational friction can be eliminated with the largest likely impact.

Output: A one-page charter identifying nonnegotiable outcomes and the types of operating friction the organization intends to address.

2. Choose one high-volume or high-friction workflow.

Rather than launching an enterprise-wide transformation, begin where operational friction is already visible. Areas such as daily crew assignments, contractor coordination, or work closeout can provide a manageable starting point.

Output: A clear scope of work for a specific workflow to examine, such as daily crew assignment, damage assessment, or event check-in.

3. Map the real process from request to closeout.

Follow the work as it actually happens, not simply as the process says it should happen. Document each activation, handoff, and approval, incorporating the experiences of dispatchers, supervisors, and field crews, including contractors.

Output: A current-state workflow map that helps identify where information stops moving and where people revert to manual processes.

“Technology is a tool of scale. If your process is not well defined, then you’re going to scale bad information or poorly defined data.”

Mike Armour

Staff Technical Specialist and Mutual Assistance Unit Leader, **FirstEnergy**

Seven Steps to Operationalize Affordability

4. Establish a baseline.

Use the operations scorecard above as a starting point for developing a current snapshot of operations. The goal is not simply to collect more data; it is to establish a small set of measures leaders can use to determine whether operational friction is actually declining.

Output: Four to six metrics, agreed upon across operations silos, that can be tracked over time, along with a clear baseline of where those metrics stand today.

5. Identify where gaps exist and how technology can fill those gaps.

Efforts to improve operational efficiency are unlikely to succeed without a clear understanding of what gaps need to be filled first. With a clear view of the actual process and a set of metrics that are providing insight into effectiveness, you can better determine where this process is falling short, which leads directly to seeking a solution that will help fill those gaps.

Output: Documented findings on how this process could be improved, accompanied by data drawn from measured metrics, to help guide the technology selection process.

6. Pilot technology against measurable outcomes.

Digitization does not by itself create efficiency. Instead, a new solution needs an effective pilot process to help gather key insights from frontline employees and get a clear initial picture of whether a given solution is impacting the baseline already established through your process map and metrics. Is the system helping to reduce operational friction, or simply trading one inefficient process for another?

Output: A clear needs assessment of what areas the pilot is expected to address, and a simple process for capturing feedback from key stakeholders during the pilot.

7. Institutionalize learnings.

Just as conditions quickly change for utility operations, so also do processes and best practices. The discipline required to maintain affordable operations requires ongoing attention. Review results in operating meetings, after-action reviews, budget planning, and appropriate finance and regulatory discussions. Operations should own the outcome, with support from IT, finance, regulatory teams, and crews in the field. That shared ownership is how affordability moves from an abstract objective to a repeatable operating philosophy.

Output: A repeatable execution scorecard and a prioritized roadmap for the next workflow.

“What we found is that if nobody is designated, nobody is doing it.”

Debra Googins
Process Improvement and
Standardization, **Avangrid**

Technology Helps Turn Affordability Into an Operations Discipline

Utilities cannot control all factors contributing to the cost of delivering electricity. Infrastructure requirements will carry costs that are largely fixed. But utilities have considerably more control over how efficiently those resources become completed work.

Every decision about which work comes first, which crew goes where, and how completed work is documented shapes the final cost of execution. Individually, those decisions may appear small. Repeated across thousands of jobs, hundreds of workers, and major emergency events, they become meaningful.

Technology is the enabling layer that makes those decisions more visible and actionable. A connected operational environment can give leaders and frontline teams a shared view of crews, work, and changing conditions; reduce administrative effort; improve use of constrained workforce capacity; and help operations move more deliberately between daily work and emergency response. Just as importantly, digital execution creates a clearer record of what happened. When work, resource decisions, timing, and completion are documented as the day unfolds, utilities are better positioned to understand their own performance and build a cycle of continuous improvement.

Technology does not make energy affordable on its own. It does help make the operating decisions that influence affordability more visible, actionable, and repeatable. Affordability may surface in the rate case, but it is built—or eroded—one operating decision at a time.



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