POWERING THE ENERGY AND UTILITIES WORKFORCE OF THE FUTURE

workvivo
by zoom

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AN INDUSTRY AT A CROSS-ROADS

The energy and utilities industry is at a crossroads ... and what else is new?

Clean energy and fossil fuels have spent decades in a struggle for dominance, with interests on both sides keeping the industry constantly pulled in two directions at once. Lately, clean energy seems to be on the ascendancy, with renewables attracting twice as much investment as fossil fuels and overtaking coal as the world's top energy source; however, fossil fuels remain a huge part of the world's economy and will likely continue to be in use for the foreseeable future, especially with the tremendous new demands for energy driven by data centers and AI.

This conflict between older, tried-and-true energy sources and new, developing sources is mirrored in the energy and utilities workforce, with an aging workforce that's retiring faster than they can be replaced. Skilled workers are even harder to find, a problem that is going to intensify as new technologies demanding specialized knowledge become commonplace. As the demand for energy continues to rise, the industry finds itself in a precarious position of having plenty of business without the human resources they need to fill it.

Some of the biggest issues impacting energy and utilities include:

A surge in demand that's overwhelming existing utility infrastructure and requiring massive capital investments.

Communication challenges that are causing high injury rates and power disruptions. With a workforce that can often be in remote, difficult-to-contact locations, improving communications is hugely important to ensure safety and quality of service.

A brain drain caused by retiring workers that's leaving younger workers without the guidance and mentorship they need to keep the aging electric grid operable. In addition, the industry is having a difficult time competing with the tech industry for the innovative young engineers and developers they need to transform.

In this guide, we'll explore how the energy and utilities sector's **workforce challenges** are threatening grid reliability, consumer satisfaction, and utility companies' reputations. We'll explore the **often-overlooked solution** to retaining knowledge and attracting talented workers away from other industries: **employee experience.**

We'll discuss the importance of **modernizing your tech stack** to help your workers meet and manage the planet's growing energy needs. And we'll offer **actionable steps** for building a resilient workforce that can help you usher in the clean energy future.

To maintain grid reliability, upgrade their infrastructure, and prepare for the future, energy and utilities companies need to develop **a new talent strategy** for **reversing the effects of the energy brain drain.** The utilities that embrace **employee experience technology** to **nurture workers, teach new skills** and **create connected, safe, and engaging workplaces** will build the **skilled workforce** needed to build and power the smart grid of tomorrow.

ENERGY AND UTILITIES INDUSTRY OVERVIEW

Power failures

The energy and utilities industry is the backbone of the global economy, employing over 69 million people worldwide and managing a record $3.3 trillion in investment in 2025. Without energy and utilities companies working around the clock to keep the power going, society as we know it would be unable to function. And lately, there are a number of factors making it harder than ever for companies to maintain the reliable service the world depends on.

Consumption conundrums

In most industries, when demand for your product increases, it's time for celebration. In the energy and utilities industry, it's a little more complicated than that. Global energy consumption is rising dramatically, driven largely by the explosive growth in data centers needed to support AI and cloud computing. This unprecedented surge in demand is straining electrical grids that were designed decades ago for much lower consumption levels. Utilities are racing to upgrade transmission capacity, build new generation facilities, and modernize distribution networks, all while maintaining dependable service to existing customers.

Climate calamities

Climate change isn't just changing how we produce energy — it's fundamentally altering how utilities operate. More frequent and intense weather events mean utility workers are constantly responding to emergencies, while rising temperatures increase demands for cooling, pushing aging electrical grids to the limit.

Experience exodus

The utility industry is facing a talent crisis at the worst possible time. Nearly half of all utility workers will retire within the next decade, leaving a gaping hole in the workforce that younger workers aren't leaping up to fill. This leaves the remaining employees overworked and stressed out, without the mentorship or guidance they need to operate complex systems safely and effectively.

The state of energy and utilities at a glance.

1,100 TWh

Global energy consumption rose nearly 1,100 TWh in 2024, more than twice the annual average.

80%

Between 2000 and 2023, 80% of all major power outages were due to severe storms, wildfires, and extreme heat.

76%

of energy and utilities employers struggle to find the talent they need to replace retiring workers.

It's impossible to predict how the transition to cleaner energy will play out over the next decades; ten years ago, few would have guessed that by 2025, China would be leading the world in renewable energy production.

The speed and success with which we transition will depend on uncontrollable factors like levels of government support, the impact of tariff wars, availability of materials, etc., and all of those factors are going to differ by country.

Amid all this uncertainty, utility companies still have to keep the power flowing, no matter what challenges arise. And to do that, you need a knowledgeable, engaged workforce capable of using the latest technology and evolving alongside your business.

THE BIGGEST CHALLENGES IN IN ENERGY AND UTILITIES

Who will keep the lights on?

The companies that control the power have a lot of power. Power outages aren't just annoying, they're costly and dangerous the longer they go on, making utility workers as essential as essential workers get. With climate change bringing about bigger storms, more unpredictable weather patterns, and rising temperatures, maintaining a functioning power grid is both more crucial and difficult than ever before. Energy and utilities companies need a well-trained, fast-moving workforce to keep the power on no matter what mother nature might bring, but there are several challenges making it hard for energy companies to build this workforce, including:

- An aging workforce retiring without anyone to replace them, leading to a loss of critical institutional knowledge and experience.

- Major communication challenges that impact worker safety.

- An influx of new technology, regulations, and processes requiring workers with specialized skills and upskilling for current workers.

- The complexity of upgrading power grids while maintaining legacy assets.

Let's take a closer look at these challenges and the impact they have on your business.

Boomer bust

Here's a staggering statistic: nearly half of all utility workers are expected to retire within the next ten years. As the baby boomers age out of the workforce, they're leaving a lot of jobs empty without anyone to fill them. It's not just a matter of finding a warm body to punch a time card; these retiring workers are the skilled engineers, operators, and technicians who built and maintained the electrical grid for decades. When they retire, they take with them irreplaceable knowledge about system quirks, operational procedures, and emergency response protocols that simply can't be found in any manual.
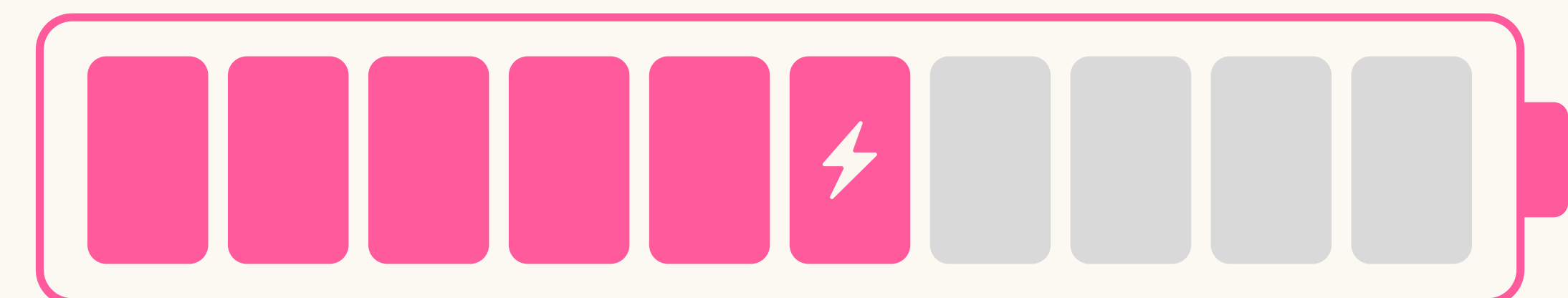
THE IMPACT

The loss of institutional knowledge threatens grid reliability, especially during emergencies, where split-second decisions based on experience can prevent cascading failures.

New hires lack the mentorship they need to understand and master complex electrical systems, leading to longer training periods and higher error rates.

Non-retirement turnover was at its highest point in 17 years in 2024.

60%

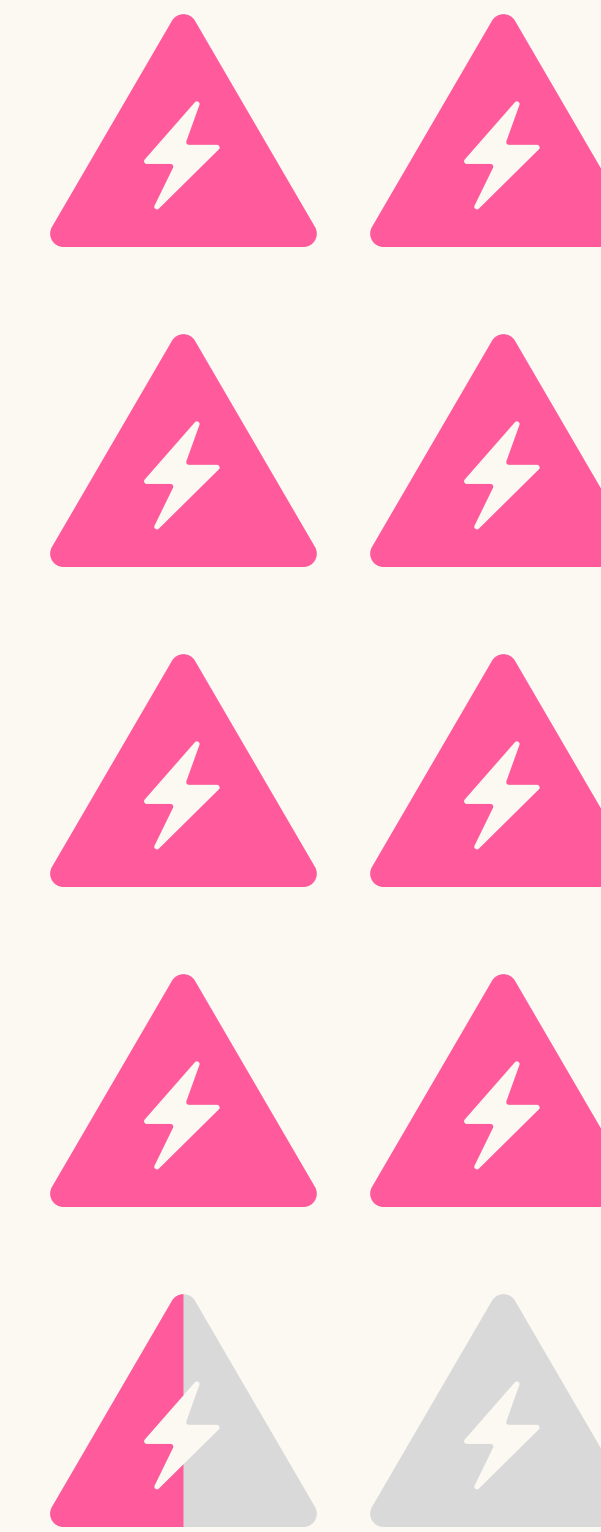of engineers and lineworkers have fewer than 10 years experience.

Can anybody hear me?

The electric grid has nodes everywhere, from remote substations to underground tunnels to transmission towers hundreds of feet in the air. Building a comprehensive communication system that can reach so many different areas reliably, in unpredictable weather conditions, is an expensive and difficult undertaking. The issue is much bigger than just speedy service — when workers don't receive critical safety information or emergency updates in time, it can be a matter of life and death.

THE IMPACT

Critical safety information gets lost due to outdated communication systems, leading to preventable accidents, regulatory violations, and potential environmental disasters.

Coordination between field crews, control room operators, and emergency responders is hampered during outages and emergencies, extending restoration times.

80-90%

of serious workplace injuries are caused by human error.

7%

The rate of exposure to serious injuries and fatalities is 7% higher in the utilities sector than the average of all other industries.

Playing tech catch-up

The transition to smart grid technologies, renewable energy integration, and digital monitoring systems requires a workforce with both traditional electrical expertise and modern technology skills. Terms like "smart grid," "IoT sensors," and "predictive analytics" have become commonplace, but many workers don't understand these technologies well enough to operate and maintain them effectively. Utilities workers desperately need training and upskilling to get up to speed and start integrating new technologies into their workflows.

THE IMPACT

Critical modernization projects are delayed or unsuccessful due to insufficient technical expertise among the workforce.

Current workers are caught in an ongoing game of catch-up, constantly learning new systems while trying to maintain existing operations.

75%

of clean energy employers reported that finding skilled installation and repair technicians was "very" or "somewhat" difficult.

7M

By 2030, there will be an estimated shortage of 7 million skilled workers in the global energy and utilities industry.

Something old, something new

Modernizing the electrical grid is an enormous undertaking that requires massive capital investment and years of careful planning. But here's the challenge: utilities can't simply tear down the old system and build a new one. They have to upgrade incrementally while maintaining reliable service using a patchwork of legacy equipment and cutting-edge technology that must all work together seamlessly.
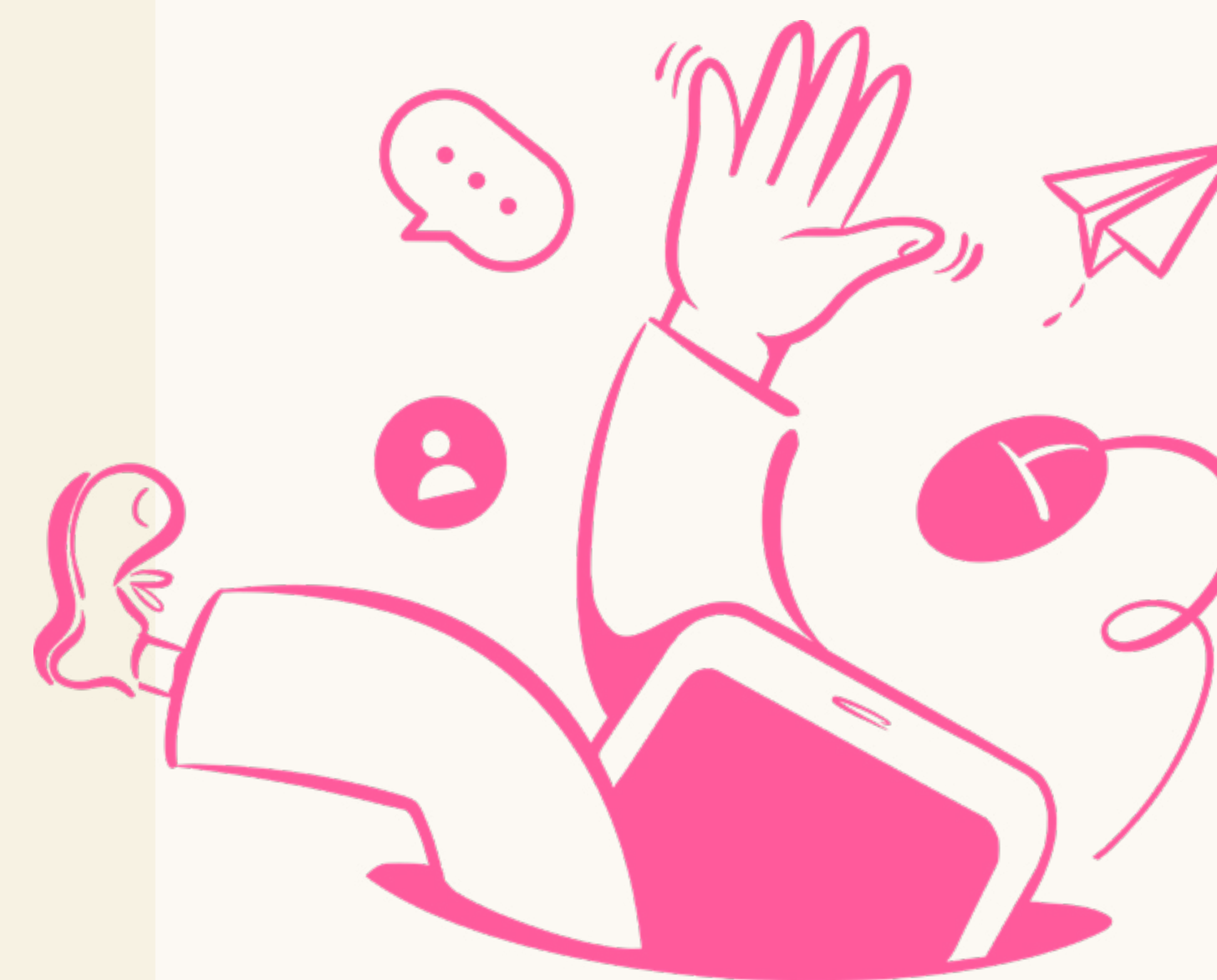
THE IMPACT

Workers need to be familiar with both decades-old equipment and modern digital systems, requiring extensive cross-training and ongoing education.

The complexity of managing interconnected systems creates new points of failure and operational challenges.

70%

Over 70% of the U.S. electrical grid is more than 25 years old.

56%

of utilities employees surveyed say there's "too much change happening at once."

THE 4-POINT ENERGY AND UTILITIES SOLUTION: BUILDING A CULTURE OF PROGRESS AND SUSTAINABILITY

When it comes to the electric grid, there isn't a lot of room for trial and error. You can't shut power down for half the country just to test something out; when the power goes out, hospitals lose life-saving equipment, data centers crash, manufacturing stops, and millions of people lose heating, cooling, and connectivity. It's arguably the most critical infrastructure system we have, yet it's maintained by a workforce that's aging out faster than it can be replaced, while operating with communication systems that haven't kept pace with the technology they're supposed to support.

The secret to attracting the best people is to create the best environment. Young workers want to feel like the work they're doing is making a difference in the world, and there are few industries where they can make more of a difference in the trajectory of our future than energy. The answer is not just to provide better pay or benefits; it's to create a better culture, where every employee feels like they belong and are working together to make the world a better place.

To attract and retain the skilled workers needed to maintain grid reliability while modernizing energy infrastructure, utilities must invest in technologies that prioritize **communication, safety, and continuous learning.** By creating **connected, engaging work environments** where workers feel valued and empowered, energy companies will build a **resilient, loyal workforce** that will help your business transform and light the way toward a better future.

We propose a 4-point solution
to create a culture of progress
and sustainability:

01 • Enhance communication practices
and capabilities to ensure safety
and operational efficiency across
distributed teams.

02 • Elevate education to bridge the gap
between traditional utility skills and
emerging technologies while capturing
and sharing institutional knowledge.

03 • Modernize technology stacks to
improve data collection, predictive
maintenance, and worker productivity.

04 • Help workers feel a stronger connection
to their jobs by highlighting the
meaningful impact of the work they're
doing and making them feel valued.

+3

Your team received
a hooray!

SOLUTION 01

Now hear this

Power outages do not inspire a lot of patience in customers.

When storms knock out power lines or equipment failures threaten cascading blackouts, every second counts, and clear communication can mean the difference between a quick restoration and a regional disaster. Energy companies need communication systems that work in all conditions and environments, from underground tunnels to remote mountain substations, ensuring that critical information flows seamlessly between field crews, control rooms, and emergency coordinators.

HOW TO DO IT

Deploy real-time safety alert systems that can instantly notify all relevant personnel about changing conditions, equipment hazards, or emergency situations. These systems should include location tracking and confirmation protocols to ensure messages are received and understood.

Create structured shift handoff protocols that ensure critical operational information, safety concerns, and equipment status are communicated clearly between control room operators and field crews across different shifts and locations.

> Safety isn't expensive, it's priceless.
>
> **Author unknown**

Power is knowledge

Assets in the electric grid have been patched and rerouted and reconfigured so often that it feels like pulling one wrong wire could shut down the entire system.

When workers retire, they take with them a lot of knowledge about how assets and systems operate in the real world that won't be found in any operations manual. Utilities companies need to preserve this valuable institutional knowledge, while training new employees on both the current state of the grid and emerging smart grid technologies.

HOW TO DO IT

Establish formal mentorship programs that pair retiring experts with newer employees, creating structured knowledge transfer processes that include hands-on training, documentation projects, and cross-generational project teams working on both legacy and modern systems.

Build digital knowledge repositories where experienced workers can document procedures, troubleshooting guides, and operational insights before they retire. Use video training libraries and interactive simulations to preserve knowledge in formats that new workers can easily access and understand.

> To have the kind of reliable energy we expect, and to have it be cheaper and zero carbon, we need to pursue every available path to achieve a really big breakthrough.
>
> **Bill Gates**

Modernize to energize

One major issue preventing utilities from hiring younger workers is a public perception that utilities companies are stuck in the past, unwilling to modernize to protect workers or innovate.

For many technical workers, the computer and technology sector has seemed like a safer, more promising route to success. However, with signs that tech investment is starting to wane, now is the perfect time for utilities companies to build a more attractive environment for the employees they want to, well, attract. Smart grid technologies, predictive maintenance systems, and mobile employee experience platforms can dramatically improve operational efficiency while increasing safety and making work more engaging.

HOW TO DO IT

Showcase technology investments prominently in external communications and recruitment materials. Highlight cutting-edge systems like smart grid controls, IoT monitoring networks, and automated response systems to position your company as a technology leader that welcomes innovation.

Implement employee experience platforms that provide seamless, app-based access to everything from scheduling and benefits to recognition and career development. Give everyone from the field to the control room access to modern, mobile-first digital tools that are both robust and intuitive.

> "
> There is no alternative to digital transformation. Visionary companies will carve out new strategic options for themselves — those that don't adapt will fail.
>
> **Jeff Bezos**

Spark engagement

Every job has its certain amount of drudgery, and when workers are busy doing routine maintenance or dealing with frustrated customers, it's easy to lose track of the bigger picture.

But energy is the backbone of civilization, and utilities workers fill a vital role that is worthy of celebration and appreciation. Connecting workers to the meaningful impact of their work — and the exciting transformations happening in the energy sector — can dramatically improve engagement and retention.

HOW TO DO IT

Use an employee experience platform to regularly share stories about how your workers' efforts are directly impacting communities, from restoring power after storms to enabling renewable energy integration that's helping combat climate change. Highlight both individual contributions and team achievements that demonstrate the vital importance of utility work.

Create recognition programs that celebrate workers who go above and beyond to maintain service reliability, improve safety, or contribute to sustainability goals. Make sure recognition is visible company-wide and includes specific details about how their work benefits customers and communities.
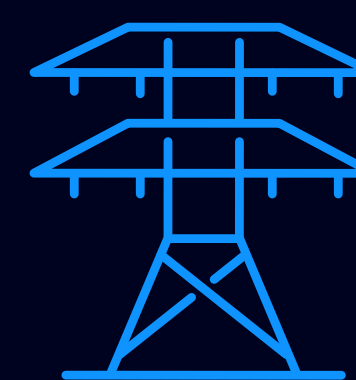
> "
>
> If you focus on sustainability as a mission or a core value, you'll also be able to attract talent. The mission is why people choose to work for you. The mission is what keeps people motivated.
>
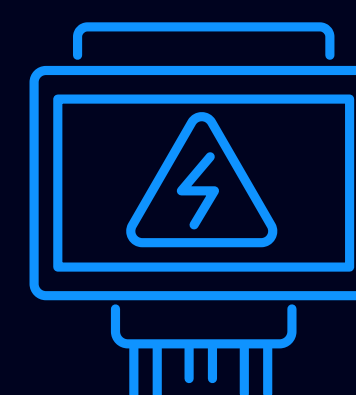> **Jennifer Granholm**
> Former U.S. Secretary of Energy

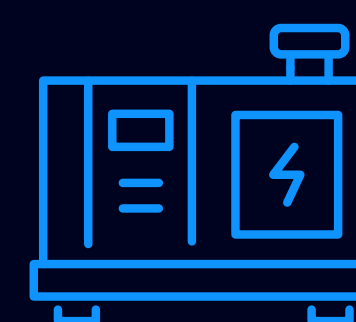# TOOLS AND TECH:
THE POWER BEHIND THE POWER

The clean energy transition represents the largest infrastructure transformation in human history, and it's creating unprecedented opportunities for workers with the right skills and tools. Smart grid technologies, renewable energy systems, energy storage, and electric vehicle infrastructure are revolutionizing how we generate, distribute, and consume power. Some of the advances that are either already being deployed or coming in the near future include:

Smart grid systems that provide real-time monitoring and automated control of electrical distribution, enabling utilities to respond instantly to changing conditions.

Predictive maintenance analytics using IoT sensors and artificial intelligence to identify potential equipment failures before they occur, reducing unplanned outages and extending asset lifecycles.

Digital twin technology in which virtual replicas of physical infrastructure are created, enabling engineers to test scenarios, optimize operations, and train workers in safe, simulated environments.

Advanced metering infrastructure giving utilities and customers unprecedented visibility into energy usage patterns, enabling demand response programs and more efficient grid operations.

Mobile workforce management connecting field crews with real-time system data, work orders, and emergency coordination, dramatically improving response times and operational efficiency.

RATHER THAN REPLACING HUMAN WORKERS, THESE TECHNOLOGIES ARE ENHANCING THEIR CAPABILITIES

and creating new opportunities for skilled professionals who can operate, maintain, and optimize these advanced systems. The key is ensuring your workforce has the training, communication tools, and support needed to leverage new technologies effectively.

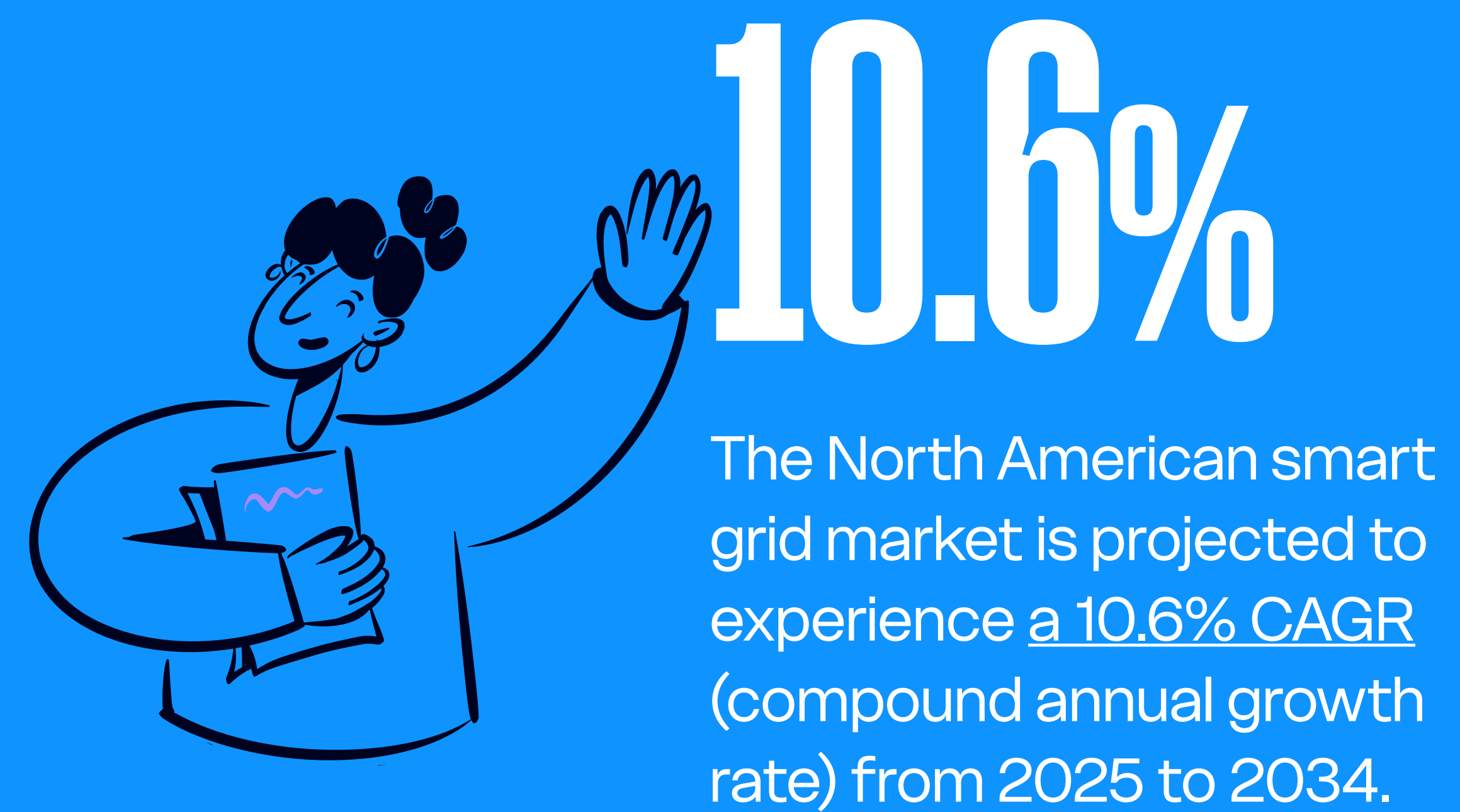# A smarter workforce for a smarter grid

Today's utility workers are doing much more than just maintaining power lines and reading meters; they're operating sophisticated digital systems that require brains as well as brawn. It's important that your workers are as connected as your infrastructure. Mobile devices enable utility workers to access real-time system data, coordinate with control room operators, and receive instant notifications about changing conditions. These same devices can also transform how workers connect with their employer and colleagues, creating opportunities for training, recognition, and collaboration that weren't possible when the workforce was scattered across remote locations with limited communication options.

To unite your teams and maximize the potential of smart grid technology, energy companies need comprehensive communication and collaboration platforms that connect workers across all locations and shifts, from control room operators to field technicians to emergency response teams.

This means implementing technology solutions that:

⭐ Enable secure, real-time communication across all shifts, locations, and operational areas.

⭐ Provide instant, mobile access to technical documentation, safety procedures, emergency protocols, and system status information.

⭐ Facilitate knowledge transfer between experienced and new utility workers through mentorship programs, training modules, and digital knowledge repositories.

⭐ Support safety communication and incident reporting across 24/7 operations.

⭐ Integrate with existing systems including Supervisory Control and Data Acquisition (SCADA), outage management, and workforce management platforms to provide unified operational visibility.

⭐ Bring the entire organization together in one central hub, regardless of shift, location, or department, creating a connected workforce that can respond quickly and effectively to any challenge.
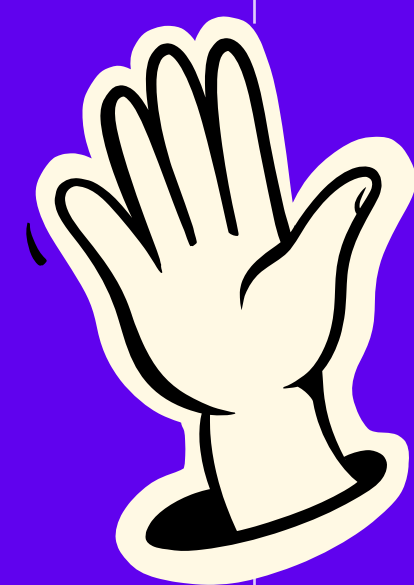
10.6%

The North American smart grid market is projected to experience a 10.6% CAGR (compound annual growth rate) from 2025 to 2034.

5X

Engaged employees are 5X less likely to have a safety mishap and 7X less likely to have a mishap that requires time off.

ONE COMPANY, ONE CULTURE

The utilities companies that will thrive in the next era of energy are the ones that understand upgrading your tech isn't the sole solution. You need to upgrade your employee experience, teaching current workers new skills while attracting talented professionals who can help your organization navigate the energy transition. To build the workforce you need for reliable operations and sustainable growth, it's important to create a culture where workers feel connected to something bigger than their individual roles.
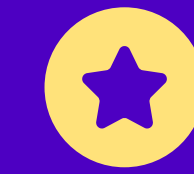
This means:

★ Improving how your company communicates so workers from all departments, shifts, and locations feel like they're part of one unified mission to keep the lights on and build the energy future.

★ Connecting 24/7 operations through secure, reliable communication systems so that everyone gets critical information needed to prevent outages, maintain safety, and respond effectively to emergencies.
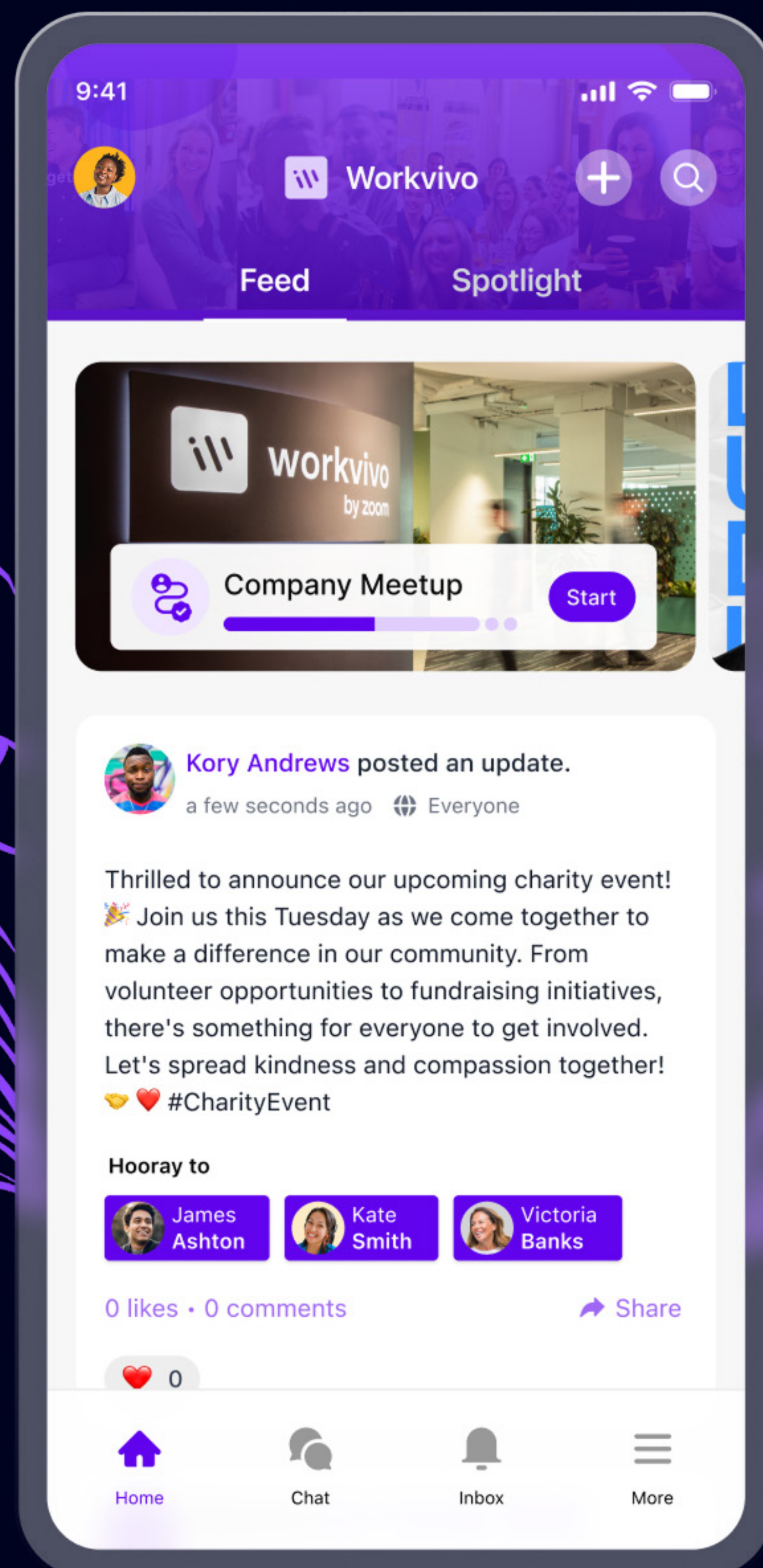
★ Creating open dialogue between workers, supervisors, and leadership so employees feel valued and heard, while ensuring that important operational information and safety updates reach everyone who needs them.

★ Most importantly, demonstrating through your actions that you value your people's expertise, safety, and professional growth. Your employees will become invested in operational excellence and the energy transition because you've shown that you're invested in their success and wellbeing.

By building a culture of progress and sustainability, you'll improve employee retention, safety performance, and operational reliability while creating the workforce advantage that will help your organization usher in the clean energy future.

07.

About Workvivo

Workvivo is the all-in-one employee experience platform built to meet the complex needs of energy and utilities organizations with diverse, distributed, and specialized teams. From the field to the plant to the home office, Workvivo provides a centralized digital hub that brings communications, culture, and operations together in one intuitive platform.

With secure, compliant communication tools, energy and utilities teams can access critical updates, share discoveries, and celebrate breakthroughs from anywhere. Workvivo supports real-time collaboration and knowledge sharing across departments through powerful, easy-to-use tools and features, including:

Chat (1:1 and Group)

Enable secure, real-time coordination between control room operators, field technicians, maintenance crews, and dispatch teams, to prevent outages and safety hazards caused by communication gaps.

Voice and Video Calling

Enables direct communication and rapid escalation between system operators, emergency response teams, and regulatory specialists, for those critical moments when expert decisions need to be made immediately.

Digital Forms (Coming Soon)

Streamline safety inspections, equipment maintenance logs, incident reports, and shift handovers with mobile-first, customizable forms — ensuring consistent documentation and regulatory compliance across power plants, substations, and field operations.

Document Storage

Give field crews and control room staff easy and secure access to safety protocols, emergency procedures, equipment specifications, and regulatory requirements right from their mobile devices, wherever they are in the world.

Surveys & Employee Insights

Collect instant feedback from frontline teams by location, shift, or operational area, to surface and address employee needs and concerns before they become systemic problems.
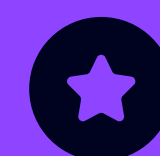
Advanced Analytics & Sentiment Analysis

Combine structured survey data with platform interaction trends to identify engagement patterns and surface early warning signals across different facilities, shifts, or operational divisions in your energy network.

Workvivo AI 'Ask'

Give employees an easier way to find safety procedures, emergency protocols, or operational updates using natural language, reducing response times and ensuring workers have immediate access to critical information without delays.

Workvivo TV (Digital Signage)

Share important messaging with rotating safety metrics, operational status updates, weather alerts, and employee recognition displayed in control rooms, substations, maintenance facilities, and field offices.

Workvivo Livestreams

Reach employees instantly through crystal-clear livestreams for powerful, shared moments that keep employees informed and build community.

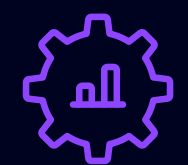## Primary benefits of Workvivo for construction teams include:

Improved communication across distributed teams

Benefit: Secure messaging and real-time updates ensure that control room operators, field technicians, line crews, and system engineers stay coordinated across vast geographical areas and critical infrastructure, reducing response times during outages and maintaining grid reliability.

Higher frontline engagement

Benefit: Field technicians, plant operators, and utility workers feel more connected and supported despite working in remote locations or isolated facilities, leading to improved job satisfaction and retention in an industry facing an aging workforce and skills shortage.

Operational efficiency at scale

Benefit: Digital workflows, centralized information sharing, and streamlined emergency communication reduce administrative burden and accelerate response times, allowing energy teams to focus on maintaining reliable service and infrastructure rather than searching for procedures or status updates.

Faster onboarding & knowledge access

Benefit: Store operational procedures, safety protocols, and emergency response plans in one accessible location. New workers have all the information they need in one place to get up to speed quickly, while veteran workers have a dedicated knowledge repository where they can document protocols and procedures for the next generation of workers.

Culture & retention

Benefit: Peer recognition, mission-driven messaging about essential services, and community building help create connections across geographically dispersed teams, keeping energy workers engaged with their critical role in society and reducing turnover in a competitive skilled trades market.
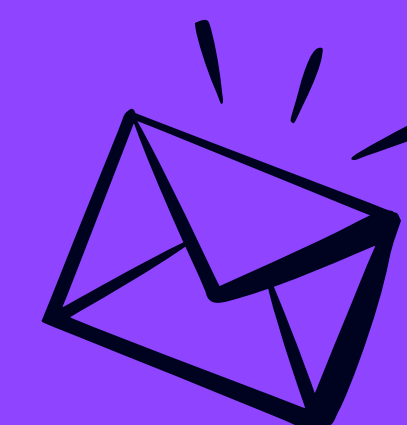
Increased visibility for managers & HQ

Benefit: Employee insights and feedback tools give operations managers and executive leadership real-time visibility into workforce sentiment, safety concerns, and operational challenges across multiple facilities, so they can take proactive action before issues impact service reliability or regulatory compliance.

Consistent, compliant messaging across sites

Benefit: Workvivo ensures critical information — from safety alerts to regulatory changes to emergency procedures — reaches the right energy personnel reliably across power plants, substations, field operations, and control centers, supporting consistent safety standards and regulatory compliance across your entire network.

Ready to take the next step in creating a culture of progress and sustainability?

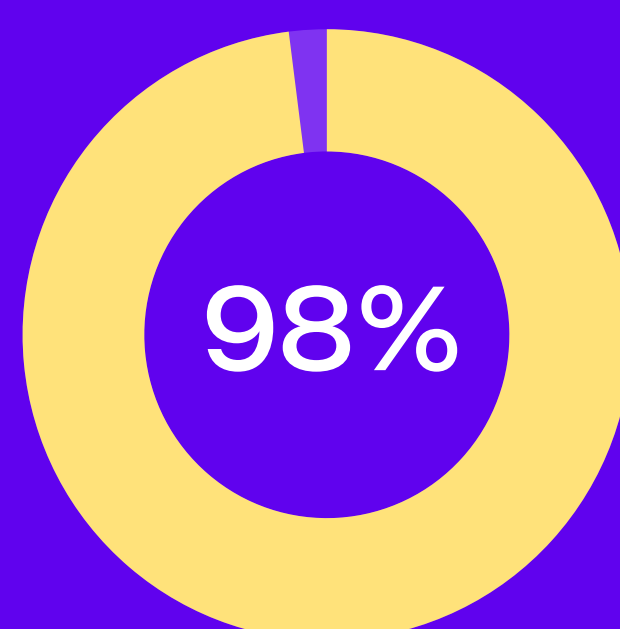Click here to schedule a demo and learn how Workvivo could work for you.

2M

Workvivo has over 2 million global users, 100% YoY growth for the last 4 years
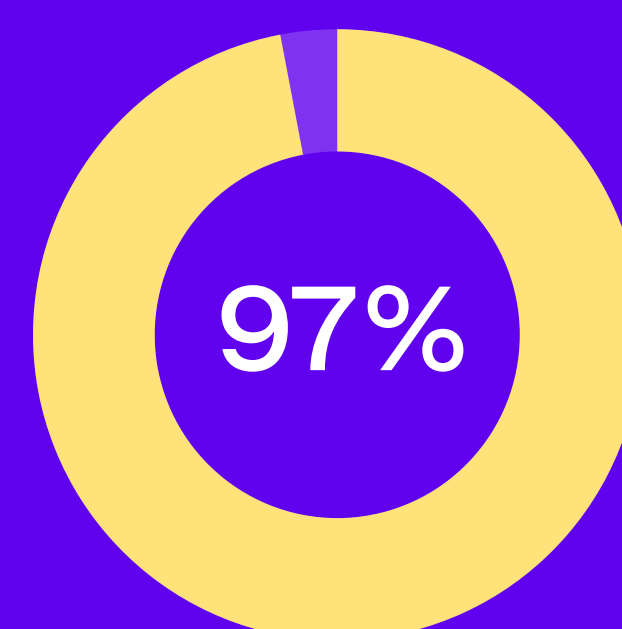
Workvivo was named a Leader in the 2024 Gartner® Magic Quadrant™ for Intranet Package Solutions

Gartner.

Learn more

98% Our customer satisfaction scores (CSAT)

97% Workvivo customer retention

#1 Rated Employee App

Market leader per user reviews in 6 G2 categories

SUMMER 2025 | G2
Grid Leader
ENTERPRISE

SUMMER 2025 | G2
Best Results
ENTERPRISE

SUMMER 2025 | G2
Best Usability
ENTERPRISE

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