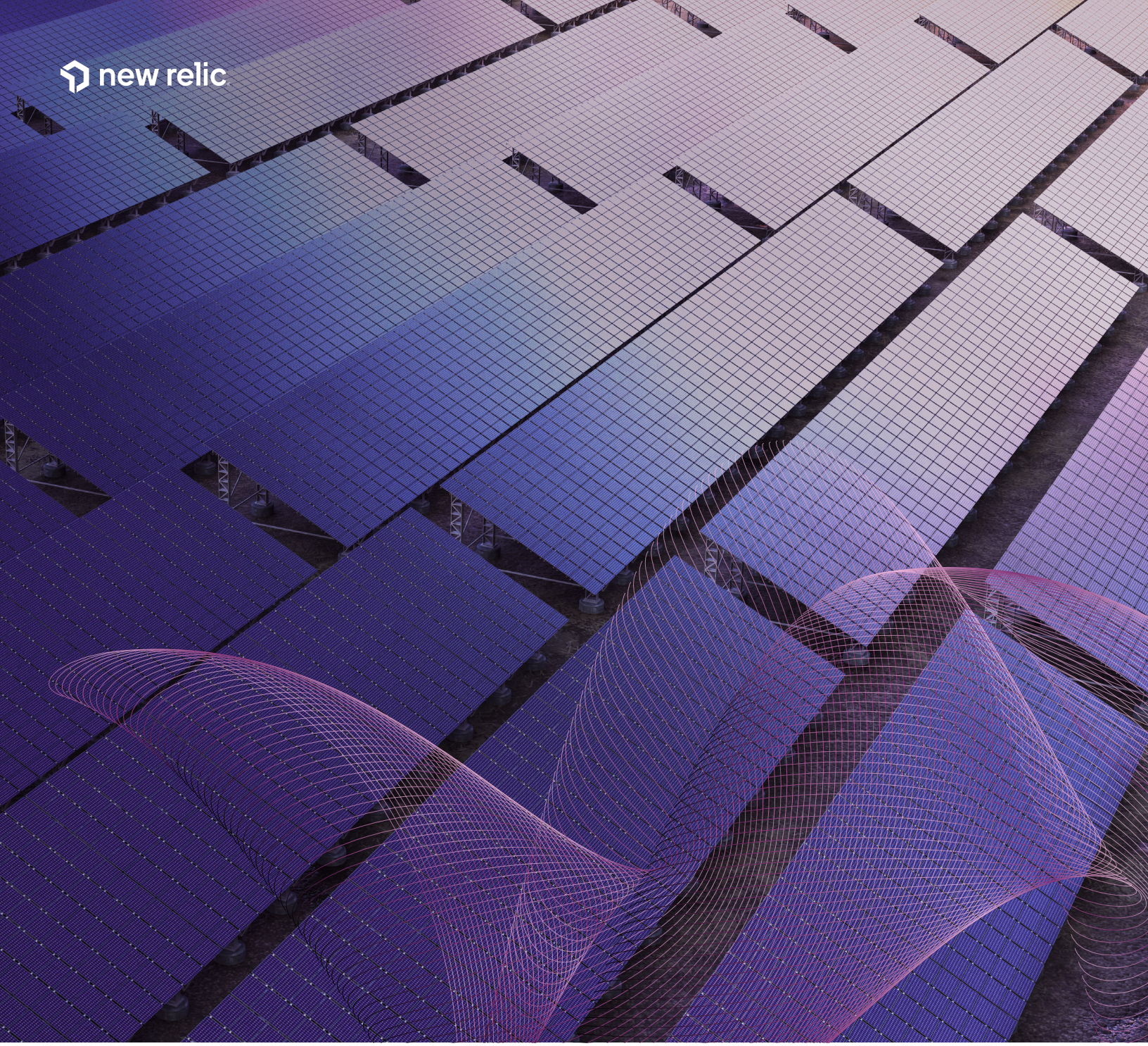


State of Observability for Energy and Utilities

Insights and analysis on the adoption and business value of observability for the energy and utilities industries

Report / June 2024

Contents

Overview

Energy and utilities providers supply an essential set of services such as electricity, gas, and water to consumers and businesses, which means they must operate with as little disruption as possible. To manage such important infrastructure, uptime and availability must be their number one priority. Simultaneously, energy and utilities providers must juggle reliability of service alongside their desire to modernize, as well as increasing scrutiny from regulators and consumers demanding green energy options, cost transparency, and access to real-time energy usage data.

With consumers placing a greater emphasis on the damaging impact of climate change, energy and utilities providers are seeking to adopt more renewable energy options. This consumer interest in green energy leads to providers increasing their rate of solar, hydroelectric, and wind power adoption, as well as focusing on decarbonization to reduce greenhouse gas emissions. By using smart grids and smart meters, an increasing number of energy providers have access to real-time energy consumption information.

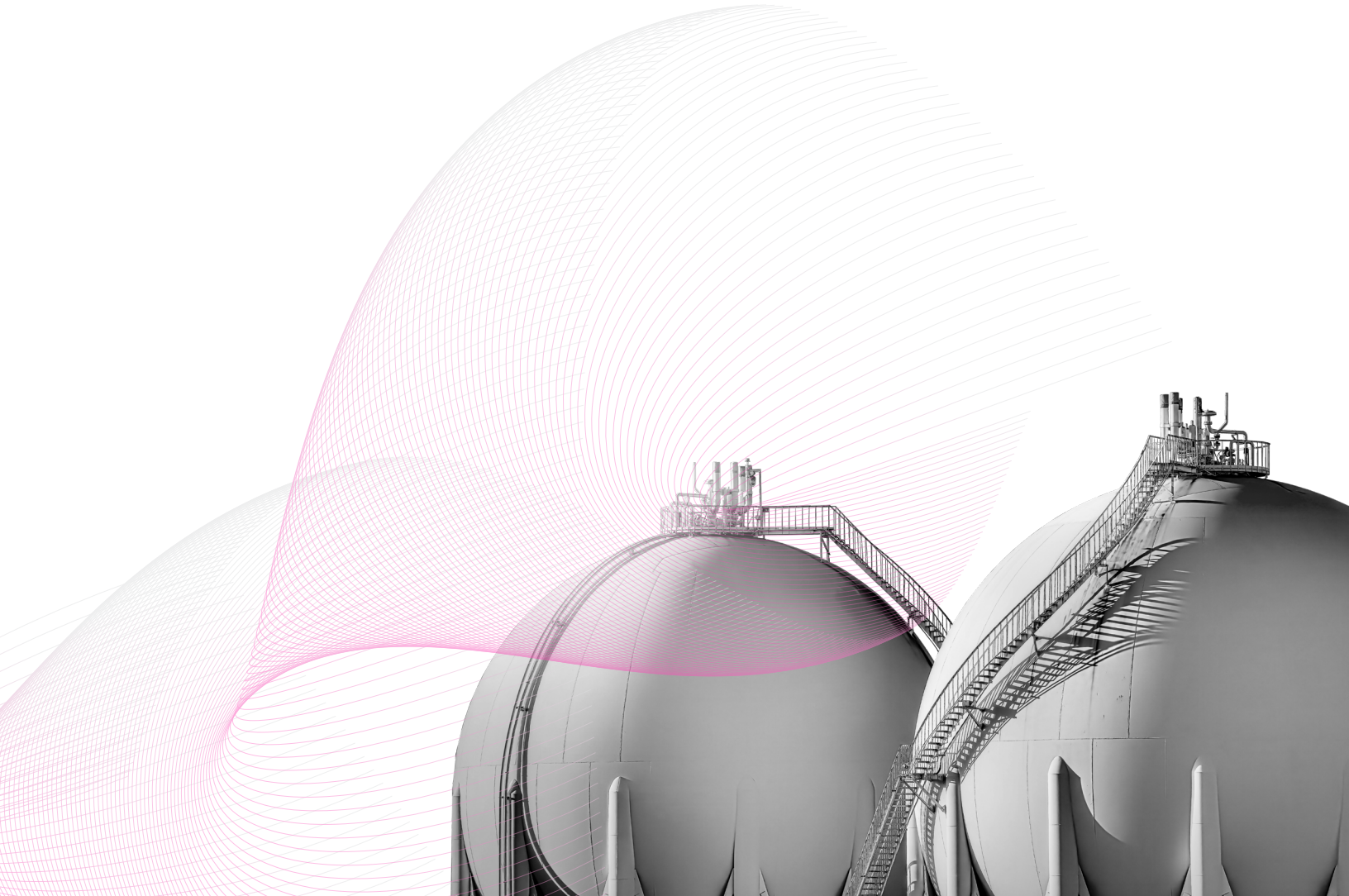
This creates customer expectations around the provision of data in real time via mobile apps so that consumers can make informed decisions about their energy use. Consumer demand for this information is leading to energy consumption and grid efficiency data creation, as well as more attention from government and industry bodies.

Energy consumption is no longer an afterthought for consumers. Some energy providers allow customers to pay for their energy consumption in advance, which puts the power back into the hands of the consumer. Additionally, comparison websites create greater cost transparency. The expectation of affordability from consumers is causing providers to become more competitive on cost. Newer entrants to the market who are using emerging technologies to create greater visibility into customer spend are pushing these lower costs.

In addition, many energy and utilities providers are beginning to use generative AI (GenAI) to manage and optimize power distribution, oversee resource management planning, boost process efficiency, and drive greater operational reliability.

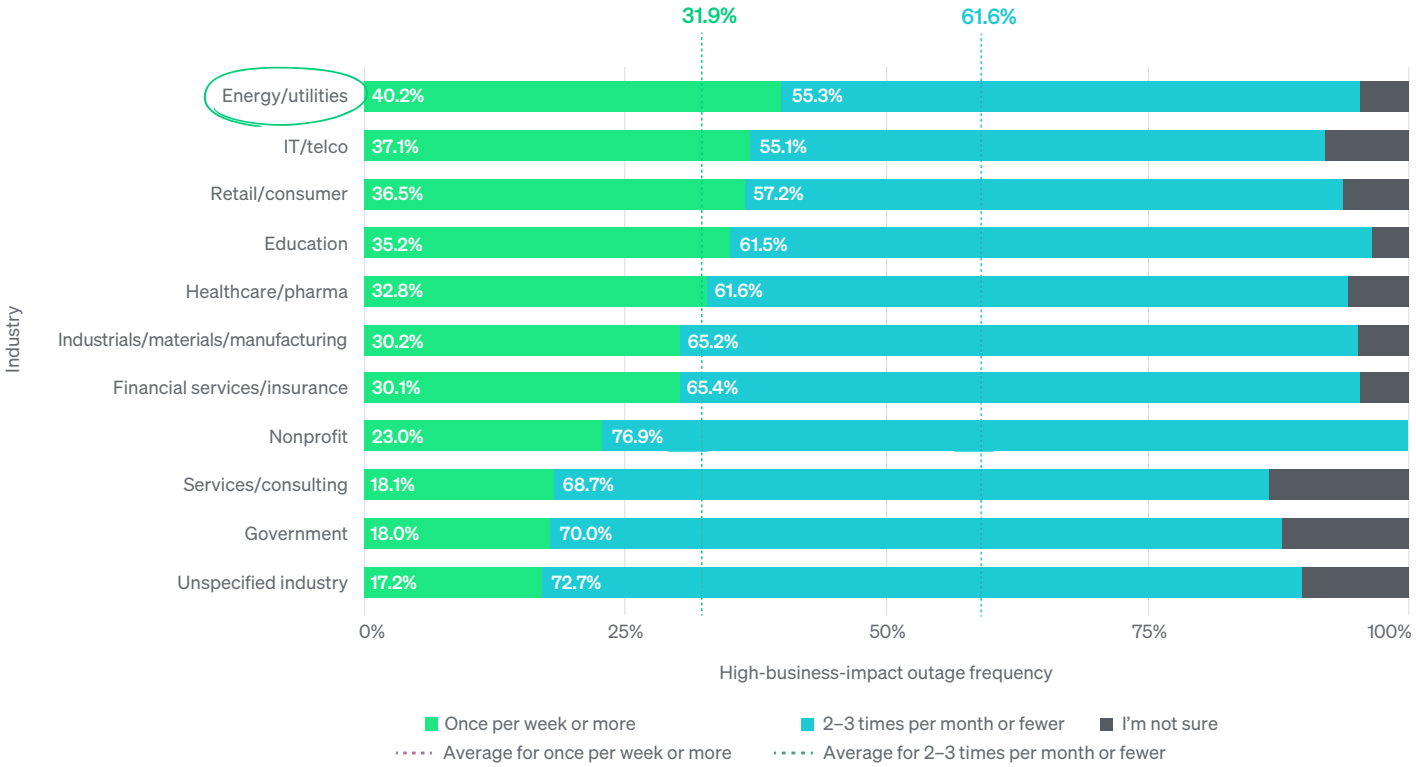
The combination of these trends has forced energy and utilities providers to balance many different priorities to meet the demands of their growing customer base. And as energy and utility providers collect more data, they must adhere to government regulations relating to competition, privacy, data protection, and green energy, such as the General Data Protection Regulation (GDPR) in Europe, Public Utility Regulatory Policies Act (PURPA) in the United States, Utilities Act of 2000 in the United Kingdom, National Electricity Law (NEL) in Australia, and Electricity Act of 2003 in India.

This report focuses on the adoption and business value of observability across the energy and utilities industries and is based on insights derived from 132 respondents surveyed in association with the *2023 Observability Forecast*.



Outage frequency and downtime

Energy/utilities organizations experienced high-business-impact outages at a higher frequency than other industries, with 40% reporting these outages at least once per week compared to the average of 32%. This finding means that energy/utilities organizations had the highest outage frequency across all industries.



High-business-impact outage frequency by industry

More than half (52%) of energy/utilities respondents said it takes at least 30 minutes to detect high-business-impact outages, and 23% said it takes at least an hour. The majority (61%) indicated that it takes at least 30 minutes to resolve them, and 31% said it takes at least an hour.

Given the relative frequency of outages noted above, this mean time to detect (MTTD) and mean time to resolve (MTTR) adds up to considerable downtime. In fact, the median annual downtime for energy/utilities organizations was 37 hours, which is the highest by a considerable margin across all industries and 61% higher than the overall average of 23 hours.

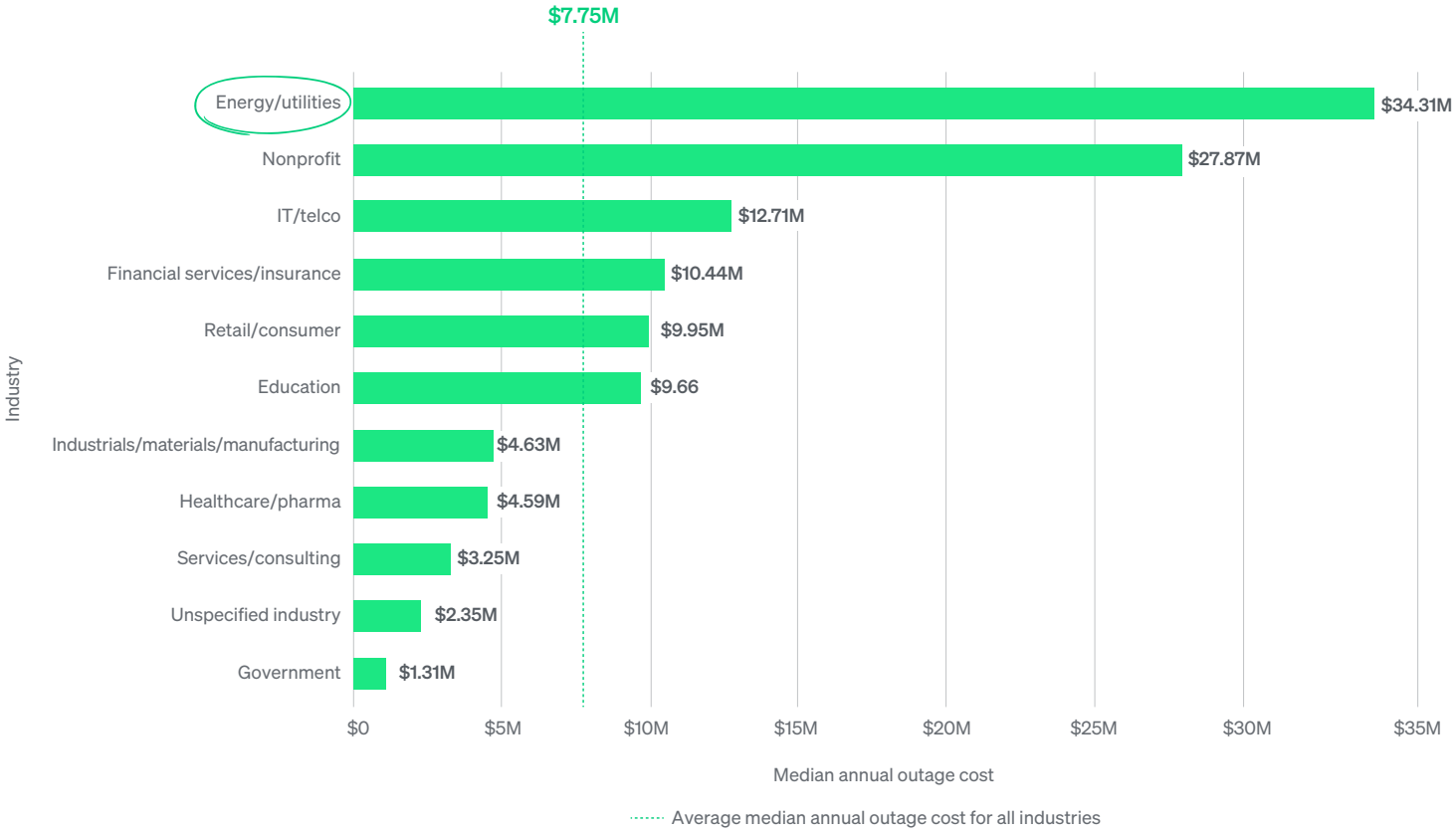
61%

took 30+ minutes to resolve high-business-impact outages

Outage cost

All that downtime comes with a price tag. More than half (52%) of energy/utilities respondents said critical business app outages cost at least $500,000 per hour. More than a third (34%) estimated they cost their organizations at least $1 million per hour.

This adds up to a median annual outage cost of $34.31 million, which is notably higher than the $7.75 million annual outage cost across all industries surveyed and the highest overall compared to other industries.



Median annual outage cost by industry

The stakes are clearly high. If an energy or utility provider's website goes down or services are interrupted for 30 minutes, it could cost them millions of dollars, attract regulatory action, and negatively influence its customers' brand perception.

But observability can help. For example, 78% said their MTTR has improved to some extent since adopting an observability solution. Additionally, energy/utilities organizations that had achieved full-stack observability reported even more substantial MTTR improvements: 87% of those with full-stack observability said MTTR improved to some degree since adopting observability, compared to 76% of respondents without full-stack observability. And nearly twice as many respondents with full-stack observability said MTTR improved by 25% or more since adopting observability: 48% of those with full-stack observability compared to 27% of those without full-stack observability.

More than two-fifths (43%) of energy/utilities practitioners said observability helps improve their life the most by increasing productivity so they can find and resolve issues faster. Plus, 39% of all energy/utilities respondents said observability increases operational efficiency, 35% said observability improves system uptime and reliability, and 32% said it mitigates service disruptions and business risk.

78%

said adopting observability has improved MTTR

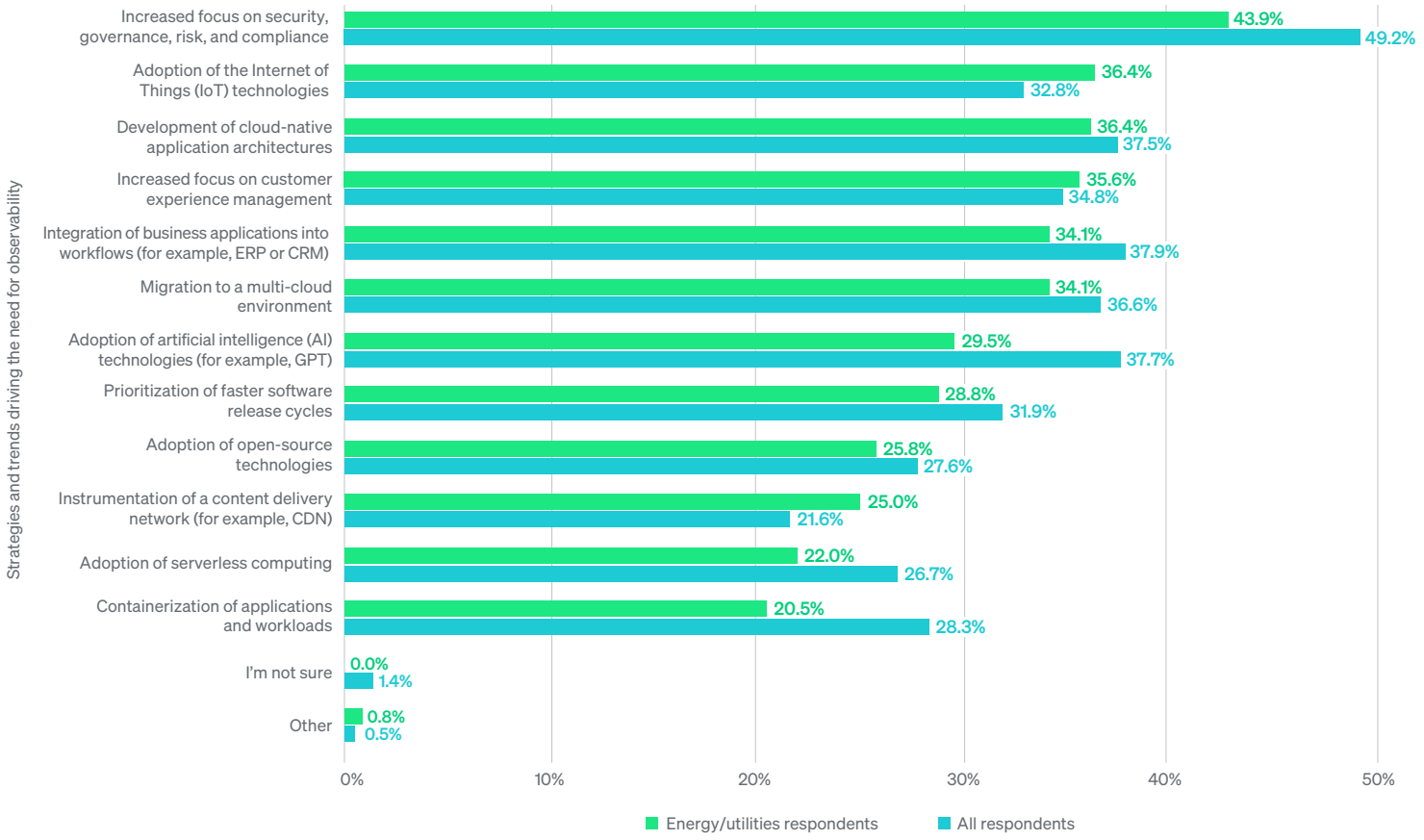
Trends driving energy/utilities observability adoption

The top technology strategy or trend driving the need for observability amongst energy/utilities organizations was an increased focus on security, governance, risk, and compliance (44%).

Notably, energy/utilities respondents emphasized the importance of Internet of Things (IoT) technologies, with 36% saying the adoption of IoT technologies is a trend driving the need for observability, compared to 33% across all industries. Energy/utilities respondents were also more likely than average to say an increased focus on customer experience management was a strategy or trend driving the need for observability (36% compared to 35% overall), as well as instrumentation of a content delivery network (CDN; 25% compared to 22% overall).

36%

said the adoption of IoT technologies is driving their need for observability



Technology strategies and trends driving the need for observability for all respondents compared to energy/utilities respondents

Observability capabilities deployed

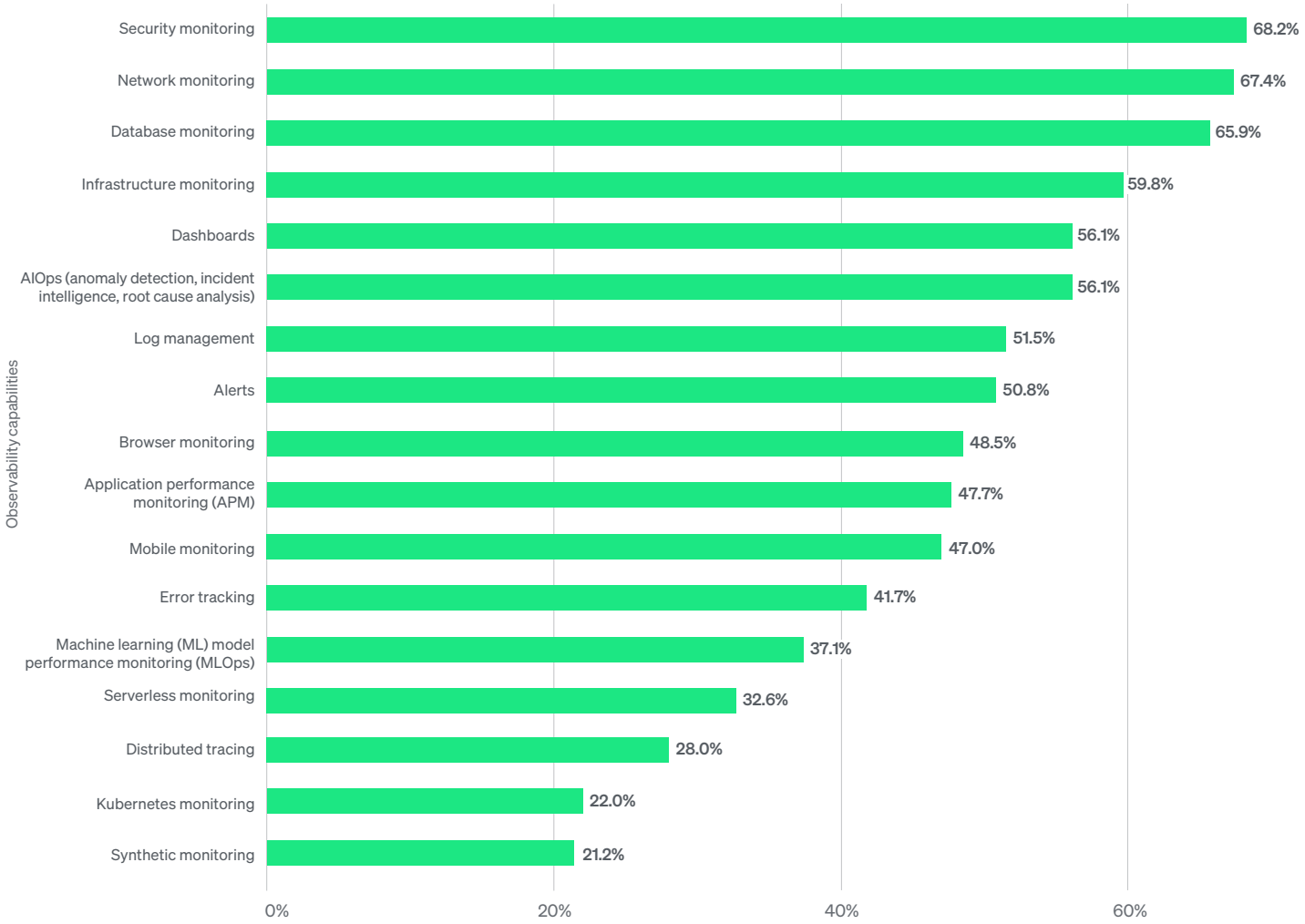
As pillars of critical infrastructure in communities, energy and utilities providers rely on real-time insights into systems and services spread across physical space. Business use cases for IoT technologies, edge computing, streaming analytics, artificial intelligence (AI), and machine learning (ML) found early traction in this sector, each an avenue to improve monitoring for uptime and reliability. Likewise, energy and utilities providers are especially prominent targets for cyberattacks, state-sponsored or otherwise, underscoring the importance of performant network, security, and infrastructure monitoring.

Respondents from energy/utilities organizations reported notably higher levels of deployment for AIOps (AI for IT operations) capabilities, including anomaly detection, indecent intelligence, and root cause analysis (56% compared to 41% overall). They also reported higher levels of mobile monitoring (47% compared to 41% overall), ML model performance monitoring (37% compared to 29%), and serverless monitoring (33% compared to 32% overall).

56%

had deployed AIOps capabilities

As far as other key capabilities energy/utilities organizations are deploying, security monitoring was the most widely deployed capability for this industry vertical (68%). Network monitoring was the second most widely deployed (67%), followed by database monitoring (66%), and infrastructure monitoring (60%). Generally, energy/utilities organizations had deployed each observability capability less widely than those from all other industries.



Deployed observability capabilities for energy/utilities respondents

Number of energy/ utilities data monitoring tools and preference

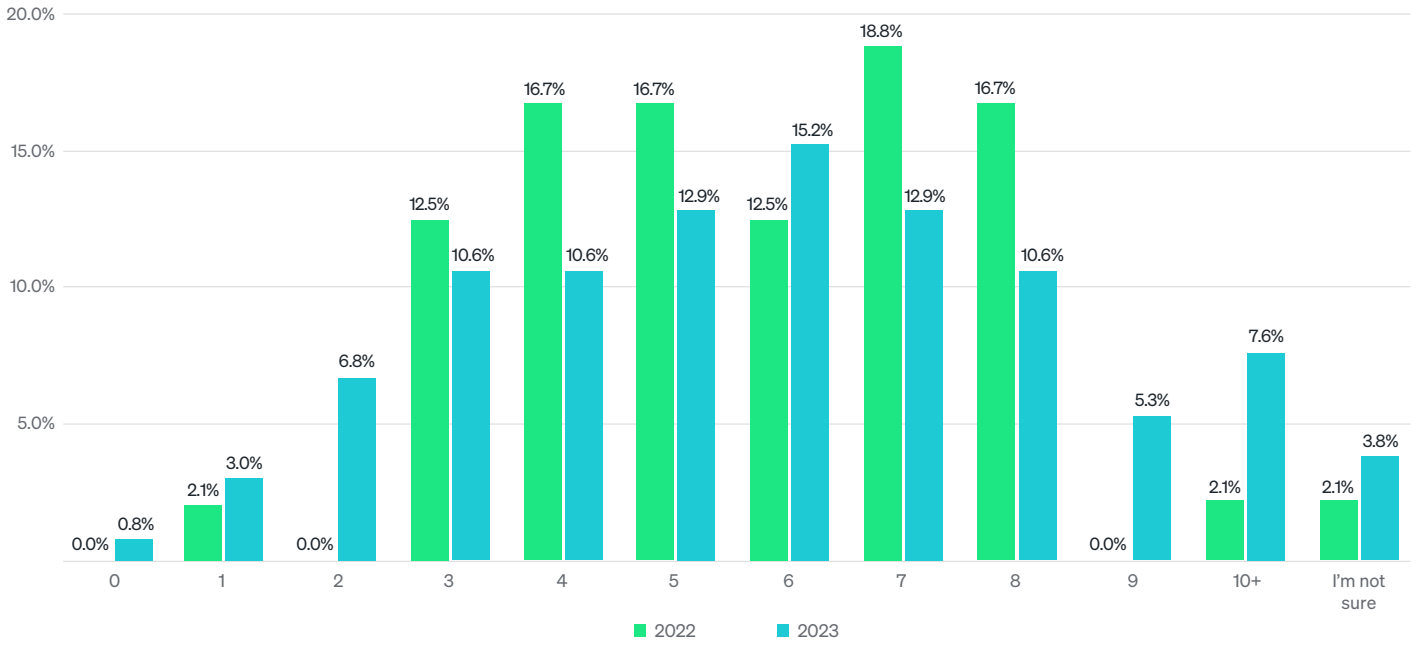
Energy/utilities organizations were more likely than average to use multiple monitoring tools for the 17 observability capabilities included in this study. Three-quarters (75%) used four or more tools for observability compared to 63% overall. And nearly a quarter (24%) used eight or more tools.

The proportion of energy/utilities respondents using a single tool has increased since last year, growing from 2% to 3%. However, the average number of tools has remained unchanged at six tools year-over-year (YoY).

The data indicate that energy/utilities organizations are spending time and money tool-hopping to understand the different aspects of their business and avoid costly outages, but more organizations are beginning to explore consolidation to fewer tools compared to a year ago.

75%

used 4+ observability tools for observability



Number of tools used by energy/utilities organizations for observability capabilities in 2023 compared to 2022

When asked how unified their organization's telemetry data (metrics, events, logs, traces, or MELT) is, 40% said it's more unified, 39% said it's more siloed, and 19% said it's roughly equally unified and siloed.

Moreover, IT teams in energy/utilities organizations detected software and system interruptions primarily from one or more monitoring tools (71%), though more than a quarter (29%) said they detect outages through manual checks or tests, complaints, or incident tickets.

Interestingly, the preference among energy/utilities respondents was for a multiple point solution (46%) rather than a single, consolidated platform (42%). Nonprofit organizations were the only other industry in the survey to prefer a multiple point solution to a single platform. However, 36% said their organization is likely to consolidate tools in the next year to get the most value out of their observability spend.

"Because we have all the data already connected in New Relic, we don't have to go in and look for it on the server. It helps us in our troubleshooting and it's reduced our mean time to resolution."

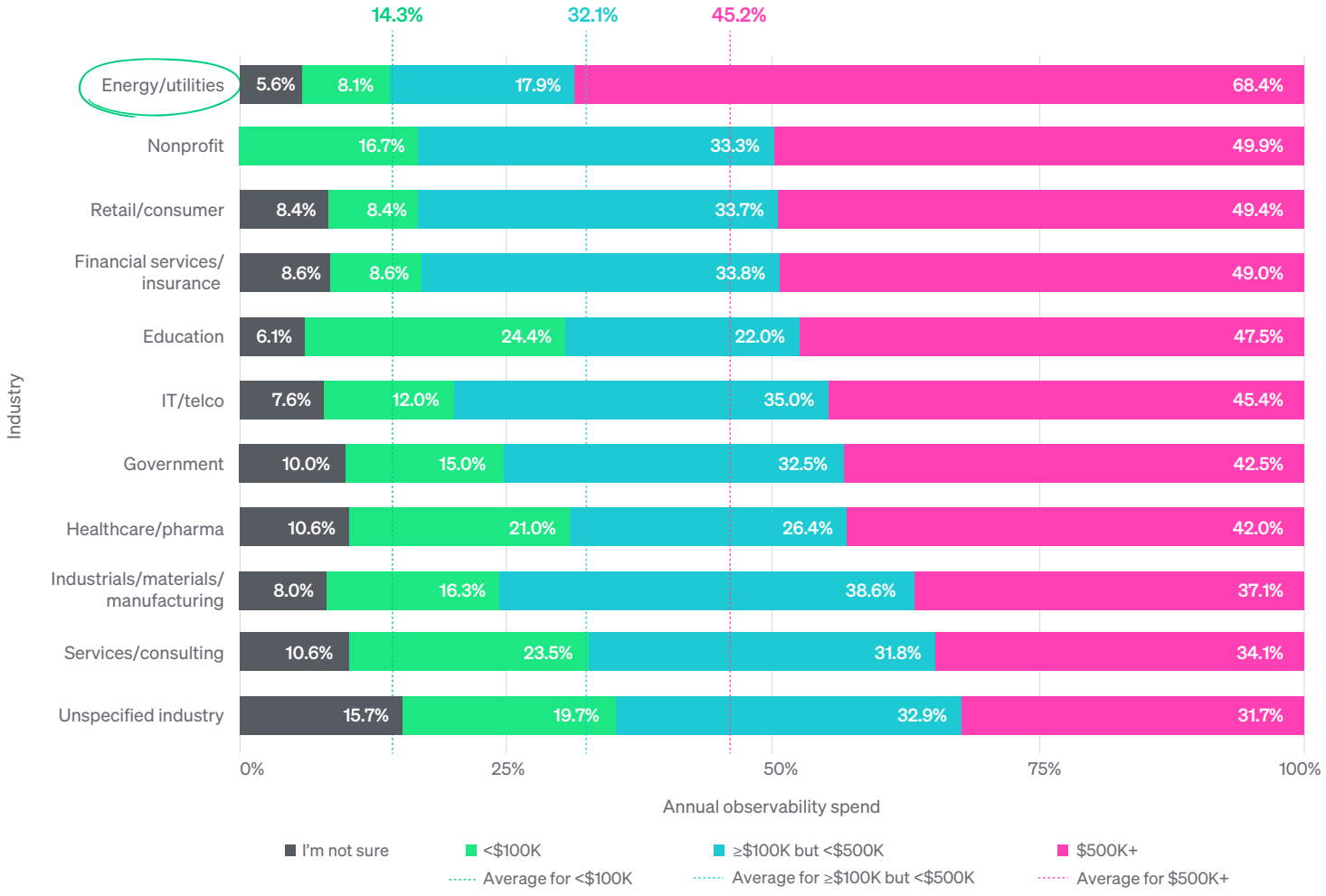
Vaidehi Chaukulkar
Cloud Engineer II at Kinect

Energy/utilities observability spend

Energy/utilities organizations cited the highest annual observability spend compared to other industries. More than two-thirds (68%) said they spend at least $500,000, and 46% said they spend at least $1 million per year on observability. Just 8% said they spend less than $100,000 per year.

46%

spend $1M+ on observability per year



Annual observability spend by industry

The business value of observability

We also asked energy/utilities respondents what ways observability helps improve their life the most. The top two answers for IT decision makers (ITDMs) were that it helps establish a technology strategy (50%) and enables data visualization from a single dashboard (46%). For practitioners, the top two answers were that it increases productivity so they can find and resolve issues faster (43%) and enables less guesswork when managing complicated and distributed tech stacks (35%).

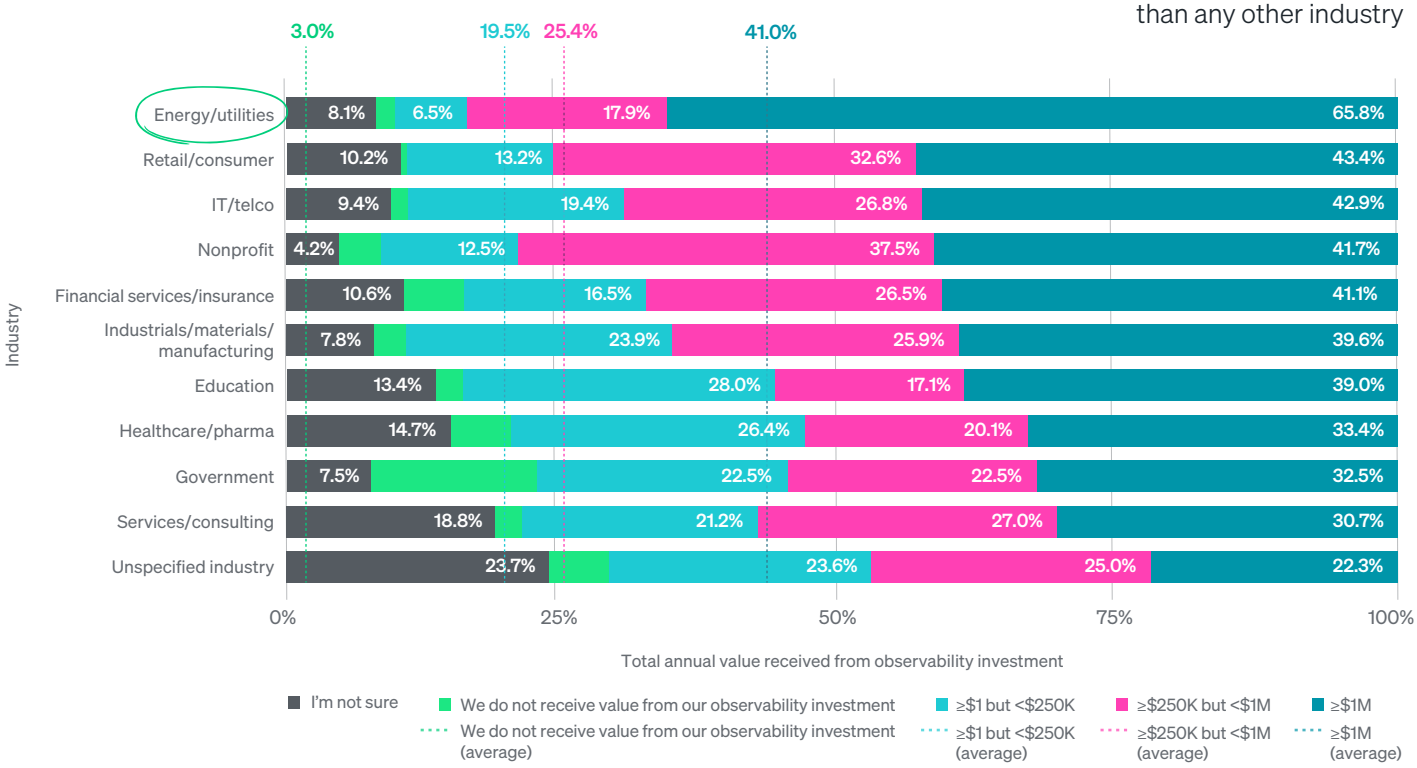
As far as business outcomes enabled by observability, 42% said observability improves collaboration across teams to make decisions related to the software stack, though 46% across all industries indicated this outcome. In addition, at least a third said observability creates revenue-generating use cases (35% compared to 26% overall) and telemetry data includes business context to quantify the business impact of events and incidents (33% compared to 27% overall).

Energy/utilities respondents also indicated that the primary benefits enabled by observability were increased operational efficiency (39%), improved system uptime and reliability (35%), security vulnerability management (35%), and improved real-user experience (29%).

When we asked them how much total value their organization receives from its observability investment per year, 76% said more than $500,000, including 66% who said $1 million or more. More than two-fifths (41%) estimated they receive $5 million or more per year in total value. Energy/utilities organizations reported a much higher total annual value received from observability than average and more than all other industries.

66%

said their organization receives $1M+ total value from their observability investment per year—more than any other industry



Total annual value received from observability investment by industry

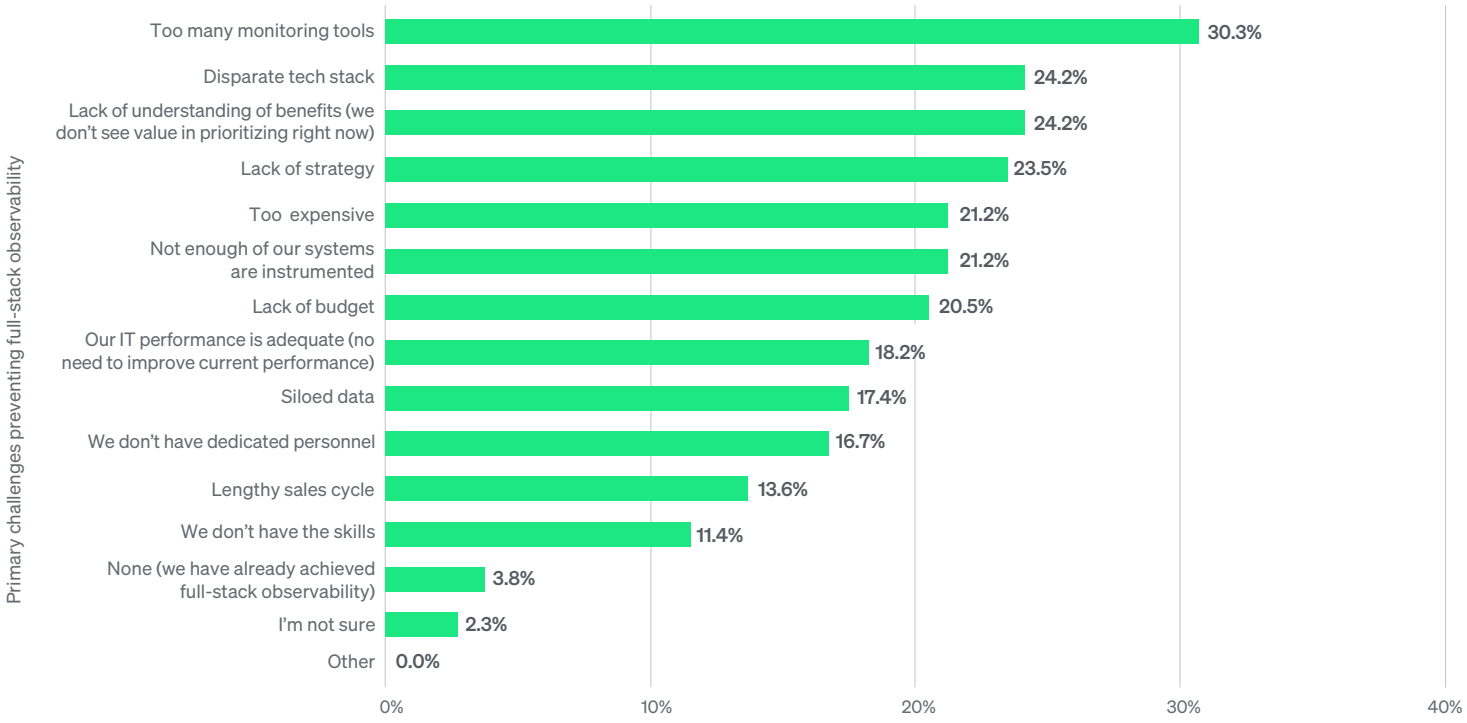
Based on annual spend and annual value received estimates, energy/utilities organizations receive nearly a 3x median annual return on investment (ROI), or 192%. Several factors had an even more positive impact on ROI. Respondents whose organizations had:

- Achieved full-stack observability (by the report's definition) had a higher median annual ROI (114%) than those who hadn't (100%).
- A mature observability practice (by the report's definition) had a higher median annual ROI (250%) than those with less mature practices (100%).
- Five or more capabilities currently deployed had a higher median annual ROI (114%) than those with 1–4 deployed (0%, meaning they broke even).
- Five or more observability practice characteristics currently employed had a higher median annual ROI (114%) than those with 1–4 employed (100%).

These findings strongly suggest that energy/utilities organizations receive nearly a 3x ROI from observability and that the ROI is even higher for organizations that monitor more of their tech stack or have a more mature observability practice.

Challenges preventing full-stack observability

Only a fifth (21%) of energy/utilities respondents have achieved full-stack observability. By far, the top challenge preventing energy/utilities organizations from achieving full-stack observability is that there are too many monitoring tools (30%). A disparate tech stack (24%), a lack of understanding of the benefits of observability (24%), and a lack of strategy (24%) were also prominent challenges.



Primary challenges preventing energy/utilities organizations from achieving full-stack observability

When asked what the most significant business outcomes would be if their organization did not have an observability solution, 28% said higher operation costs due to increased operational effort, and 24% said reduced team velocity due to limited visibility.

In addition, the top three pricing- or billing-related issues experienced by energy/utilities organizations with their observability vendor(s) in the past year were paying for unwanted bundles to get needed capabilities (48%), paying for the whole month or year at the peak usage level (45%), and rapid data growth significantly impacting the bill (41%).

48%

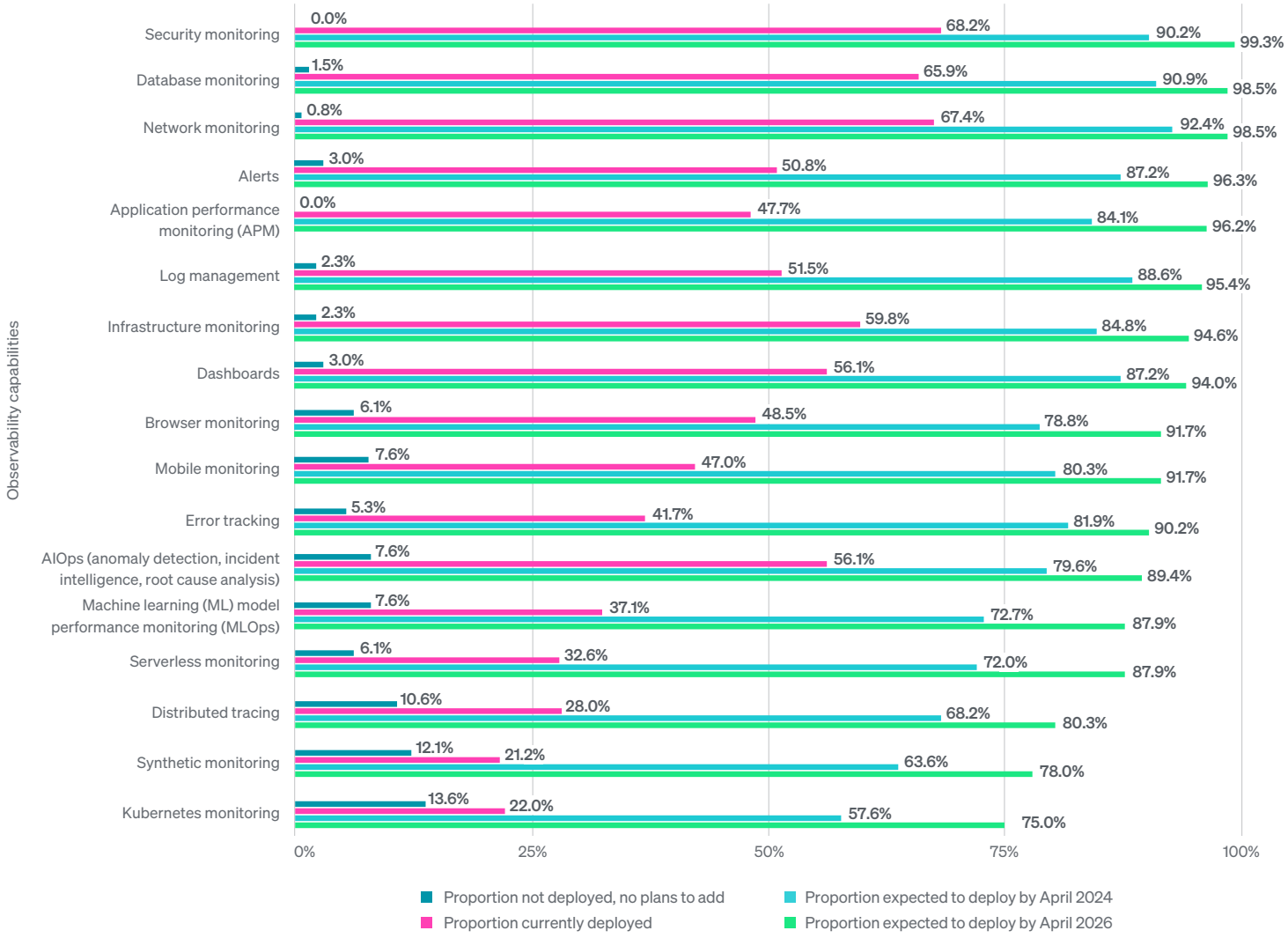
paid for unwanted bundles to get needed observability capabilities in the past year

The future of observability for energy/utilities

Energy/utilities organizations had ambitious observability deployment plans for the next one to three years. For example, by mid-2026, nearly all expected to have deployed security monitoring, database monitoring, and network monitoring (all 99%), followed by alerts and application performance monitoring (both 96%).

More energy/utilities organizations report current deployment of AIOps, ML model performance monitoring (MLOps), and serverless monitoring than compared to respondents across all industries. Likewise, by mid-2026, the vast majority planned to have deployed these three capabilities: 89% for AIOps and 88% for both MLOps and serverless monitoring.

To get the most value out of their observability spend in the next year, 48% planned to train staff on how to best use their observability tools, 42% planned to optimize engineering team size, and **36% planned to consolidate tools in the next year**.



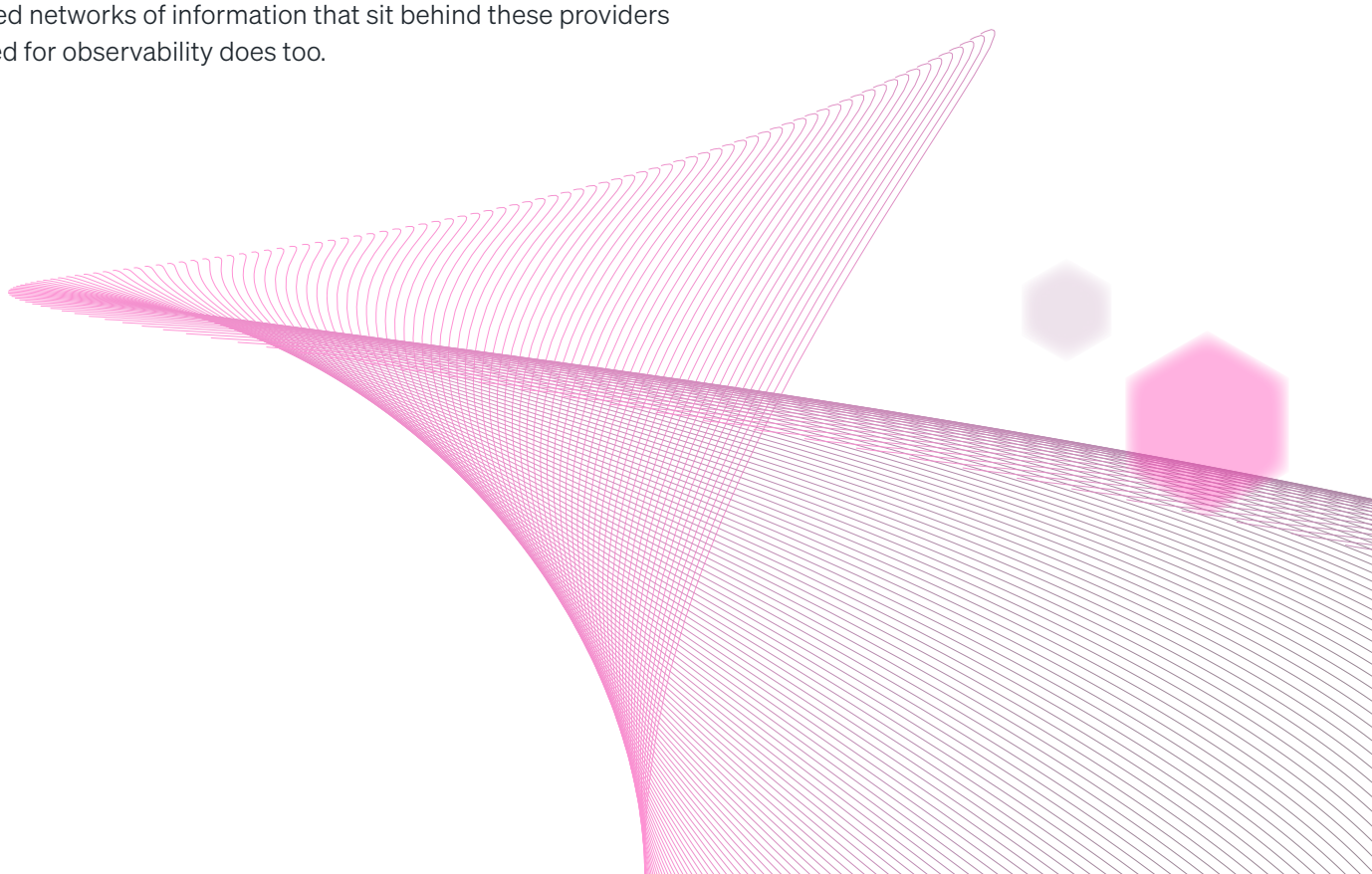
Observability capabilities deployment summary for the energy/utilities industry from 2023 through 2026

Summary

Energy and utilities providers are facing a wide range of challenges and opportunities. An ever-evolving regulatory landscape, emerging cybersecurity threats, and consumer demand for transparency and real-time information about energy use are converging in the energy and utilities sectors, emphasizing the need for observability to support uptime and reliable service. Meanwhile, technological developments in IoT and AI chart new frontiers for energy and utilities providers' tech stacks and necessitate maximum visibility.

Insights from the *State of Observability for Energy and Utilities* show that the energy and utilities industries are experiencing high rates of outages and enormous costs associated with that downtime. Engineering teams are spending significant time and money tool-hopping to understand the different aspects of their business and resolve issues that can lead to costly outages and poor customer experiences.

The data suggest that while energy and utilities providers are juggling multiple observability tools—and still seem to prefer multiple point solutions—more providers are consolidating to fewer tools compared to last year. Given their strong interest in deploying more capabilities in the next few years, signs indicate that these providers may move from point solutions to more robust platforms that provide end-to-end visibility. As the complicated networks of information that sit behind these providers grows, the need for observability does too.



Getting started

New Relic is uniquely positioned to help energy and utilities providers deliver on cutting-edge technological investments while maintaining uptime and reliability that customers and regulators demand. Critical infrastructure initiatives, such as green energy that relies on IoT technology and edge computing, as well as sustainability practices like GreenOps, depend on real-time insights into critical health indicators across the entire technology ecosystem to achieve impactful, long-term climate solutions. Learn how New Relic took action to reduce carbon emissions.

To achieve this, the first step is to model data from field instrumenting sources like IoT devices along with system-level telemetry such as user interactions, cloud service metrics, and business data from customer relationship management (CRM) systems, transactions, and post-interaction activities. Then both technical and business teams can use the New Relic all-in-one observability platform to monitor important business metrics in real time, gain insights into critical metrics that directly impact the business such as revenue lost during an outage, make data-driven decisions about software investments, and build better customer experiences across all channels to maximize ROI.

Energy and utilities providers can leverage New Relic capabilities to optimize critical backend and core system operations such as infrastructure monitoring, application performance monitoring (APM), alert quality management (AQM), and dashboards.

Developer teams working on frontend capabilities like online billing and customer service can use the New Relic core web vitals quickstart (a pre-built, open-source integration that includes dashboards and alerts) to monitor their site's core web vitals with the New Relic browser monitoring agent and use service level management to take action on low user scores.

Consolidating monitoring tools on the New Relic platform enables energy and utilities providers to lower operational costs, boost team efficiency with less context switching, and achieve greater visibility into and across their often complicated technology stacks.

They can also use the New Relic Pathpoint business observability app to merge customer, product, and services paths into a single business journey and quantify the financial impact of business metrics. For example, if their website went down, Pathpoint could show not only that the outage occurred, but also how much potential revenue was being lost for every minute of downtime.

Core web vitals are metrics Google uses to gauge overall site user experience, which can influence search engine optimization (SEO) rankings and provide valuable insight into how users perceive the business. The benefits of understanding core web vitals include an improved user experience, better SEO, enhanced performance optimization, greater insights and analytics, and increased business value.

Learn more about New Relic for energy/utilities and request an in-depth, customized demo to find answers to your tough technical questions and get competitive pricing information.

Request a Demo

About this report

All data in this report are derived from a survey, which was in the field from March to April 2023 as part of our work in publishing the *2023 Observability Forecast* report. It's the only study of its kind to open-source its raw data. View the *2023 Observability Forecast* survey results.

Energy/utilities respondents comprised 132 of the total respondents surveyed in the *2023 Observability Forecast* report, or 8%.

ETR qualified survey respondents based on relevant expertise. ETR performed a non-probability sampling type called quota sampling to target sample sizes of respondents based on their country of residence and role type in their organizations (in other words, practitioners and ITDMs). Geographic representation quotas targeted 15 key countries.

All dollar amounts in this report are in USD.

Definitions

View the definitions used in this report.

About New Relic

As a leader in observability, New Relic empowers engineers with a data-driven approach to planning, building, deploying, and running great software. New Relic delivers the only unified data platform with all telemetry—metrics, events, logs, and traces—paired with powerful full-stack analysis tools to help engineers do their best work with data, not opinion.

Delivered through the industry's first usage-based pricing that's intuitive and predictable, New Relic gives engineers more value for their money by helping improve planning cycle times, change failure rates, release frequency, and MTTR. This helps the world's leading brands and hypergrowth startups to improve uptime, reliability, and operational efficiency and deliver exceptional customer experiences that fuel innovation and growth.

About ETR

Enterprise Technology Research (ETR) is a technology market research firm that leverages proprietary data from its targeted ITDM community to deliver actionable insights about spending intentions and industry trends. Since 2010, ETR has worked diligently at achieving one goal: eliminating the need for opinions in enterprise research, which are typically formed from incomplete, biased, and statistically insignificant data.

The ETR community of ITDMs is uniquely positioned to provide best-in-class customer/evaluator perspectives. Its proprietary data and insights from this community empower institutional investors, technology companies, and ITDMs to navigate the complex enterprise technology landscape amid an expanding marketplace.

Request a Demo