WHITE PAPER

Challenges in the Utility Sector
The Road to EHS Maturity

97% of EHS Programs are Not Future-ready.

How Do Utilities Stack Up?

The Global EHS Readiness Index (GERI), a recent study by HSI and Focus Network, shows significant gaps in utility industry EHS programs. It provides advice on improving EHS processes, emphasizing the vital role technology plays in managing EHS risks.

The utility industry is constantly changing. While reliability, affordability, and resilience are crucial, utilities are becoming more digital, data-driven, and service-oriented. Managing a large network of physical assets remains difficult, but digital technologies are helping to handle them better. However, challenges arise as utilities adopt new technologies, navigate regulations, and face threats like cyberattacks and severe weather.

Key areas specific to utilities:

- Utility assets pose inherent risks due to dangerous substances and high voltage, but many health and safety issues arise from working in new locations across their service areas. These issues include accidents during construction and maintenance, low-voltage cable collisions, and incidents when reconnecting customers after severe weather.
- Employee well-being is increasingly important as employees often work alone or put in long hours during emergencies. Utilities are challenged to ensure their workforce's safety while also preventing accidents involving the public. They must stay proactive to anticipate new risks.
- Improving overall data collection, including location data and condition data, can improve health and safety outcomes for employees and the public. Additionally, adopting technology like telematics can further improve safety.

Utilities are not only tackling these challenges, but leading efforts to cut carbon emissions and support customers in achieving sustainability goals. This change, coupled with economic uncertainty, requires greater flexibility and adaptability while making reliability more complex.

The push for digitalization, environmental regulations, and decentralized energy sources will continue shaping the industry, moving from traditional to digital operations and promoting increased agility. Modernizing the grid involves establishing a data-driven and automated business and operational model.

Utility companies often use separate tools to manage basic EHS tasks like vehicle checks and incident reporting. Research by Focus Network highlights key issues for EHS solutions to address including:

- Fatigue management
- Contractor oversight
- Driver safety
- Vehicle and equipment inspections
- Worker safety and mental health

To tackle EHS concerns in the industry and handle large amounts of generated data, utilities need flexible and scalable EHS solutions that match the industry's agile and distributed systems.

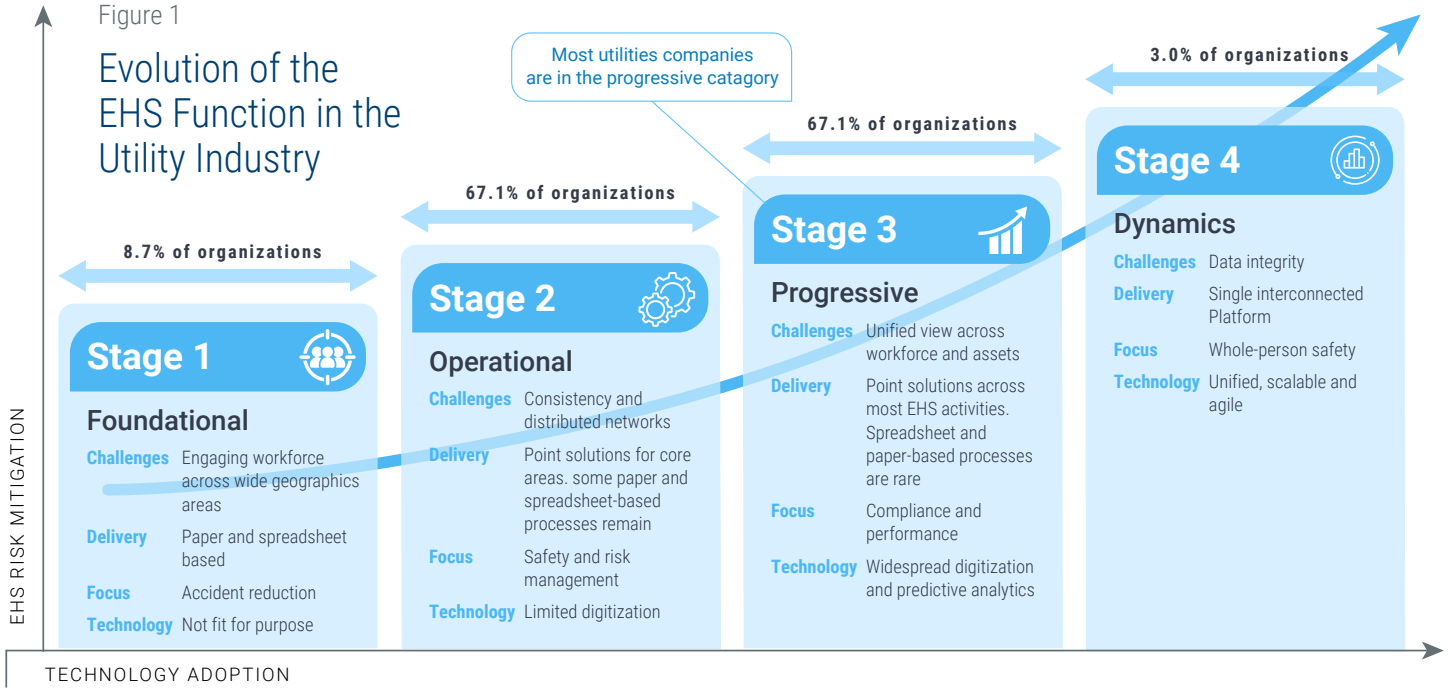
In the utility industry, digitalizing EHS processes is critical for improving health and safety, enhancing business performance, and meeting strict ESG standards. Connecting assets and workers and analyzing data are vital for utilities to better manage EHS risks.

Because of their fragmented structure, utilities still rely on outdated systems and manual processes like paper or spreadsheets for reporting. This reliance makes it difficult to improve performance by consistently applying EHS policies throughout the company.

Individual tools usually lack customization and fail to provide the connectivity and data analysis needed in a high-risk industry. It's crucial for utilities to update their EHS systems to improve visibility and use real-time data effectively. A connected, data-focused approach helps uncover hidden risks and make better decisions. The utility sector is relatively mature in EHS compared to other industries as shown in Figure 1.

Figure 1

Evolution of the EHS Function in the Utility Industry



Mastering EHS Implementation Challenges: What You May Not be Thinking About

Technology is quickly changing the EHS function. More AI and data analytics tools are emerging, allowing organizations to become more resilient with unified platforms. An increased focus on psychosocial risks will prompt EHS leaders to develop comprehensive safety processes.

EHS implementation challenges faced by utilities include:

- Safe integration and management of remote assets and workers: the industry's decentralized nature makes it challenging to track all assets and workers, especially those working alone. Visibility is essential for EHS in this sector, so integrating EHS processes is particularly important.
- Connectivity between systems: utility companies face difficulties in connecting different systems, causing workflow challenges. For instance, incidents reported in one system should prompt actions throughout the company's operations. Unfortunately, this integration often fails. Similarly, alerts from machine conditions might not reach all necessary employees and contractors if they're using different systems.

- Cybersecurity issues: utilities' critical infrastructure is a top target for cyber attacks. The widespread use of older operational technology and its decentralized nature create a large attack area, providing numerous opportunities for cyber threats.
- Psychosocial factors and fatigue: psychosocial factors are often overlooked in the utility industry. Stress from tight deadlines, fatigue, and uncertain work conditions increases the likelihood of mental health problems. Lone working is another significant issue, as workers spend long periods driving and working in remote locations, which can be stressful.
- Knowledge management and contractor management: utilities often rely on contract workers, which presents ongoing challenges in ensuring these workers receive proper training and follow safety protocols. Contractor use complicates EHS risk management and poses significant challenges in knowledge management.
- Environmental impact risk: utilities are significant contributors to air pollution and CO_2 emissions. Many utilities are moving toward decarbonization and renewable energy sources. They face growing regulatory pressure to minimize their environmental impact, measure their emissions, and lead the way toward a decarbonized future.

The GERI report from Focus Network provides maturity scores, represented as percentages, for various attributes in the utility industry. Respondents were asked questions about different aspects of the EHS function, and their answers determined maturity levels for each component. For instance, if an organization can't detect mental health incidents, it receives a low score for psychosocial and mental health maturity. On the other hand, having a centralized compliance management system boosts the maturity score for compliance obligations. These scores are combined to calculate an overall mean EHS maturity score.

You may be surprised to hear it, but compared to other industries, utilities are faring well. However, that doesn't mean they are where they need to be. The utility industry is considered "progressive" in EHS compared to other industries. However, it's important to address specific EHS areas needing attention. The gap in psychosocial and mental health risks compared to the industry average is particularly significant. This gap indicates a need for greater focus on this area.

Figure 2 displays the least developed EHS components in the utility sector, highlighting the biggest gaps in EHS performance. These areas need special attention. It also shows the average score across all industries. Notably, data reporting and integration stand out as areas requiring more attention.

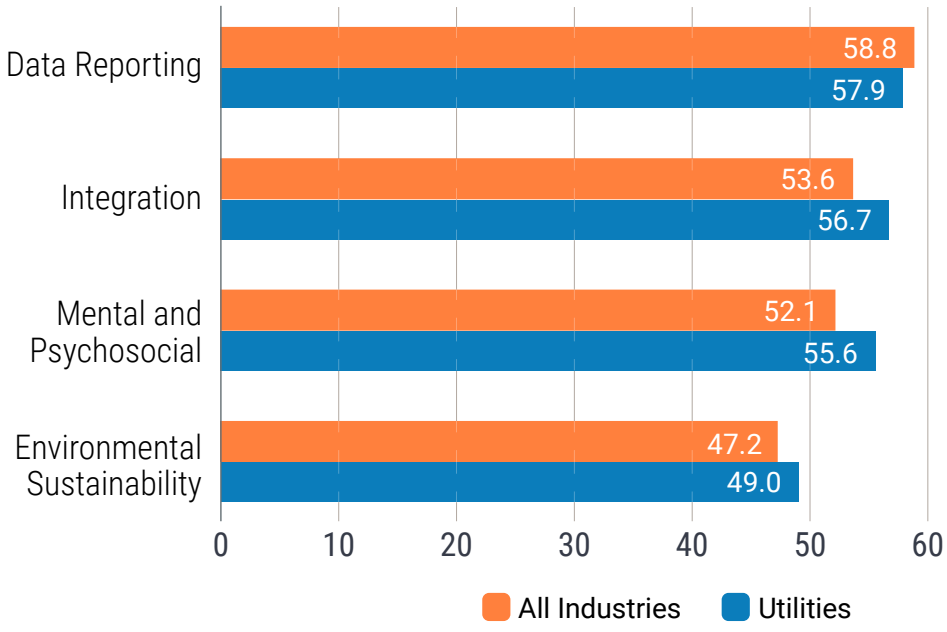


Figure 2:

EHS Components with Low Maturity in the Utility Industry

According to the OHS Director of a utility with more than 10,000 employees, "Condition data is vital for understanding the risk posed by our equipment and assets." Paying close attention to audits and monitoring for completing pre-departure checks and asset inspections is essential, with the potential to use IoT sensors and third-party applications.

Although utilities experience high accident rates, they often lack maturity in using EHS risk management technology.

Utility EHS and safety leaders must use technology to adopt a platform-based approach for risk mitigation.

This approach involves:

- Ensuring they can see all EHS activities, assets, and workers and continuously monitoring and taking immediate corrective action. Having a unified view of risk is crucial for utilities due to their decentralized nature. According to the GERI study, only 16% of utilities have this unified view.
- Ensuring a clear and unified view across workforces, sites, and installations. Keeping all documentation and data in one place. Both management and individual workers should see all EHS processes and their implementation. Utilities increasingly need to move beyond monitoring to gain deeper insights and understanding of their operations.
- Quickly addressing incidents from remote areas and reporting them to the relevant regulatory authorities. Having compliance controls, critical controls, and risk registers on a single platform for automated cross-referencing and action. The GERI study shows only 18% of organizations worldwide have centralized compliance management systems covering all assets and workers.
- Providing training and certification. Ensuring all employees and contractors are trained for compliance and safety across the organization. Modern centralized EHS platforms enable the workforce to access the EHS function from any device and location.

Using a platform for EHS digital transformation gives companies flexibility to access resources as needed, adjusting features according to business requirements. This approach also offers scalability and quick setup.

Emerging EHS Trends in the Utility Industry

The utility industry has embraced digital technology for many processes but lags in adopting EHS technology. While worker tracking and asset monitoring are mostly digitized, EHS processes remain fragmented and partly digital. Digital technology can greatly enhance EHS processes, ensuring compliance, fostering a safety culture, and improving worker health and safety. Figure 3 illustrates the evolution of the EHS function.

Figure 3

The Evolution of the EHS Function

	Traditional	Modern	Emerging
EHS Function	Manual	Digital	AI and data-driven
Delivery	Paper-based and spreadsheets	Multiple point solutions	Single platform
Staff	Support	Enable compliance	Build resilience
Focus Area	Reducing death and injury	Safety management	Whole-person safety
Challenges	Engaging with entire workforce	Consistency across distributed assets and workforces	Unified view and data integrity
	1990s	2020	2030

Sensors are widely used to collect and share data in the utility EHS ecosystem, offering more precise and timely insights. Robotics, drones, and wearables are also increasingly used, leveraging data for better EHS outcomes.

Digital EHS solutions help utilities ensure all workers across wide geographic areas have access to resources needed to comply with and benefit from EHS policies. This access leads to increased productivity, better performance, and fewer outages due to accidents or equipment damage. These solutions also empower remote workers by providing checklists, incident reporting, real-time alerts, notifications, and training capabilities from any device and location.

Data analytics is crucial for EHS leaders to make effective real-time decisions, removing blind spots and enhancing control. It also offers visibility into the workforce's engagement with EHS activities. AI and predictive analytics are increasingly used to leverage data for better EHS outcomes and actionable recommendations.

While reliability, affordability, and resilience remain crucial, utilities are increasingly focusing on sustainability and digitization. The industry faces challenges such as fragmented EHS processes, cybersecurity threats, and psychosocial factors impacting worker safety. To address these challenges, utilities need to adopt a platform-based approach for risk mitigation, enhance data analytics capabilities, and prioritize training and certification.

By leveraging technology and centralizing data, utilities can improve EHS outcomes, ensure compliance, and foster a safer working environment for employees.

For more information, download a copy of the full Global EHS Readiness Report. Then, take an EHS assessment to compare your specific results against those from the global survey.

About HSI

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