EHS Maturity in Utilities: How Does the Industry Compare?

The Road to EHS Maturity in the Utilities Sector

The Global EHS Readiness Index (GERI) provides insights from over 1000 Global Health and Safety Leaders. This benchmarking report provides a comparison of EHS maturity in the Utilities industry versus all industries in the study.
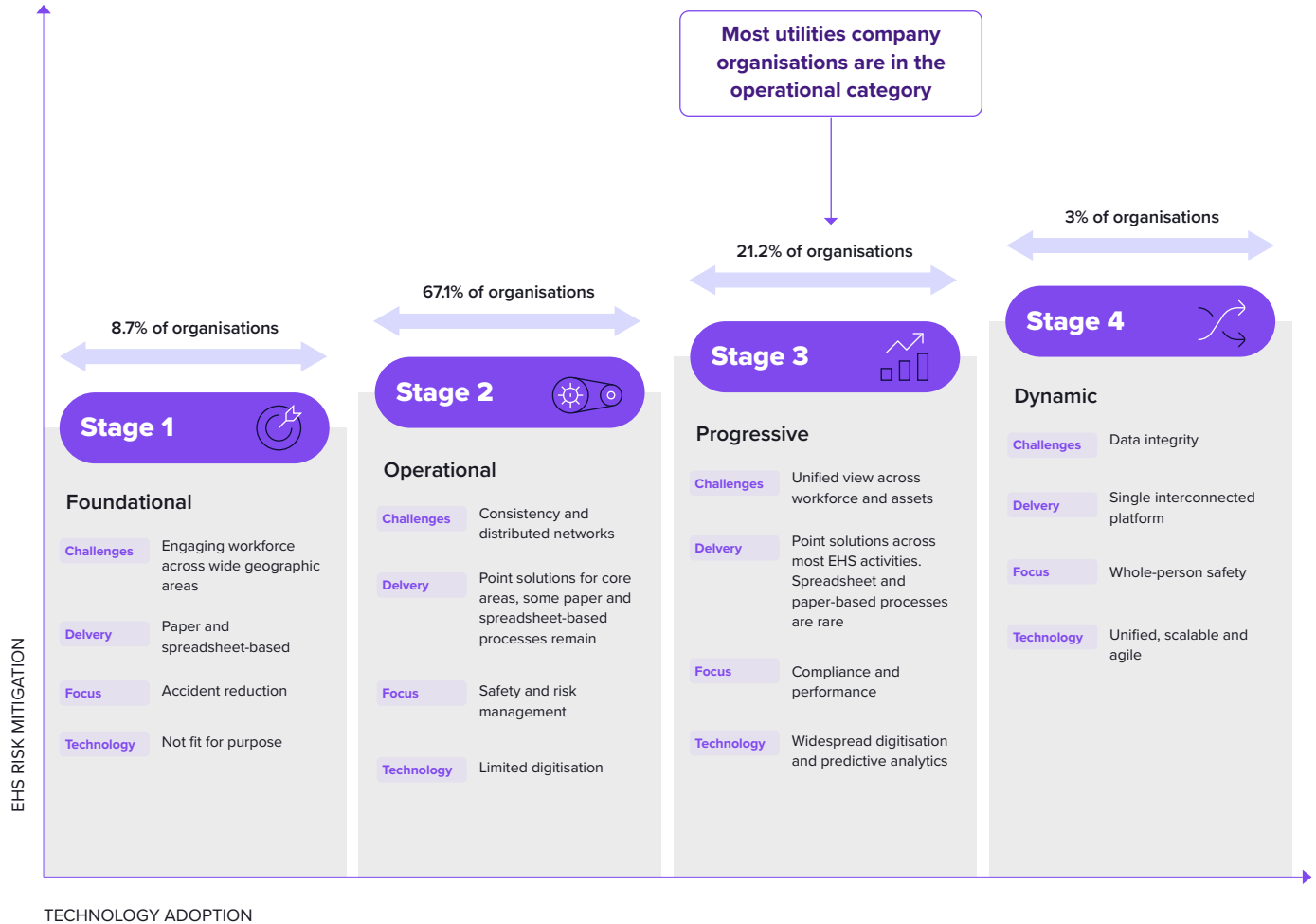
Utility workers face a range of high-risk EHS hazards across electricity, water, gas, and telecommunications services. These include electrical hazards from high-voltage systems, risks of explosions and leaks from gas infrastructure, exposure to hazardous chemicals in water treatment, and confined space dangers in pipelines and underground networks. Workers also face risks from extreme weather conditions, working at heights, heavy machinery operation, and slips, trips, and falls in both urban and remote locations. Additionally, fatigue, lone working, and emergency response pressures contribute to psychosocial risks in the sector.

The recent HSI and Focus Network Global EHS Readiness Index (GERI) highlights major gaps in EHS posture in the sector and offers guidance on how to optimise EHS outcomes. Technology plays a key role in managing EHS risk in Utilities.

Figure 1

Evolution of the EHS Function in the Utilities Sector

Most utilities company organisations are in the operational category

21.2% of organisations

3% of organisations

8.7% of organisations

67.1% of organisations

EHS RISK MITIGATION

Stage 1

Foundational

Challenges	Engaging workforce across wide geographic areas
Delivery	Paper and spreadsheet-based
Focus	Accident reduction
Technology	Not fit for purpose

Stage 2

Operational

Challenges	Consistency and distributed networks
Delivery	Point solutions for core areas, some paper and spreadsheet-based processes remain
Focus	Safety and risk management
Technology	Limited digitisation

Stage 3

Progressive

Challenges	Unified view across workforce and assets
Delivery	Point solutions across most EHS activities. Spreadsheet and paper-based processes are rare
Focus	Compliance and performance
Technology	Widespread digitisation and predictive analytics

Stage 4

Dynamic

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Challenges	Data integrity
Delivery	Single interconnected platform
Focus	Whole-person safety
Technology	Unified, scalable and agile

TECHNOLOGY ADOPTION

The Key Challenges Faced
in the Utilities Sector

The GERI report identified common challenges within the Utilities sector.

External events and pressures continue to introduce new risks. For example, extreme weather events and climate change are increasing hazards for field workers, while evolving regulations and infrastructure demands add complexity to safety compliance. Additionally, workforce shortages, aging infrastructure, and increasing violent and abusive behaviour towards workers contribute to higher workloads, increased fatigue, and operational risks across the sector.

Leading EHS implementation challenges faced by utilities companies include:
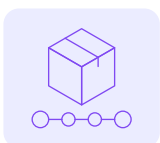
Integration and managing remote assets and workers safely

The distributed and increasingly decentralised nature of the industry makes it difficult to get visibility and track all assets, installations, and workers, in particular lone workers — visibility is essential for EHS in this sector. It is particularly important that EHS processes are integrated.
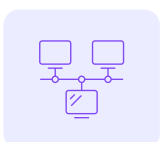
Lack of connectivity between systems

Utilities firms have major challenges in connecting workflows. For example, an incident logged within one incident management system should trigger corrective actions and new workflows across the company's ecosystem. Often, this does not happen. Similarly alerts, triggered by, for example, machine condition, may not reach all relevant employees and contractors if they are using different systems.

Cybersecurity issues

Critical infrastructure owned and managed by utilities companies is now a primary target for cyber attacks. The continued use of legacy operational technology and its distributed nature, creates a massive attack surface and many opportunities for malicious actors.

Psychosocial factors and fatigue

Psychosocial factors are often overlooked in the utilities industry. Stress associated with tight timelines, fatigue and insecure working conditions make mental health issues more likely to occur. Lone working is also a major factor. Workers often spend long periods of time driving and working in remote locations alone.

Knowledge management and contractor management

Utilities companies typically use a lot of contract workers. Ensuring that they are adequately trained and that they follow safety procedures is an ongoing challenge. The use of contractors adds to the complexity of EHS risk management in the sector and makes knowledge management a major challenge.

Environmental impact risk and ESG compliance

Utilities companies are leading causes of air pollution and CO_2 emissions. There is an ongoing move towards decarbonisation and the greater use of renewable energy sources. Utilities companies are under increased regulatory pressure to reduce their environmental footprints, measure their environmental impact and lead the way to a decarbonised future.

EHS Maturity in Utilities:
Areas of Focus

Focus Network's recent Global EHS Readiness Index (GERI) report reveals mean maturity scores by attribute for the utilities sector, in percentages, where 100% is the highest score. Respondents were asked a series of questions relating to each component of the EHS function. Responses to these questions were then used to determine maturity for each component. For example, an organisation that indicates it cannot detect mental health incidents is given a very low score for psychosocial and mental health maturity. Another example is an organisation that indicates it has a centralised compliance management system in place. This contributes to a higher maturity score for compliance obligations. Maturity levels for each component are then aggregated to give an overall mean EHS maturity score.

The utilities sector is defined as progressive from an EHS perspective, relative to other industries. Nevertheless, it is worth highlighting the EHS areas that require the most focus. Notably the gap between the psychosocial and mental health risk factor in manufacturing and the mean risk factor across all industries is high. Clearly much more emphasis needs to be placed on this factor.

Figure 2 shows EHS components for the utilities sector that are the least mature. These reveal the biggest gaps in EHS posture for utilities organisations. It is these areas that require particular attention. It also illustrates the mean percentage score across all industries. Notably data reporting and integration emerge as leading areas that need greater focus.

Figure 2

EHS Components with Low Maturity in the Utilities Sector
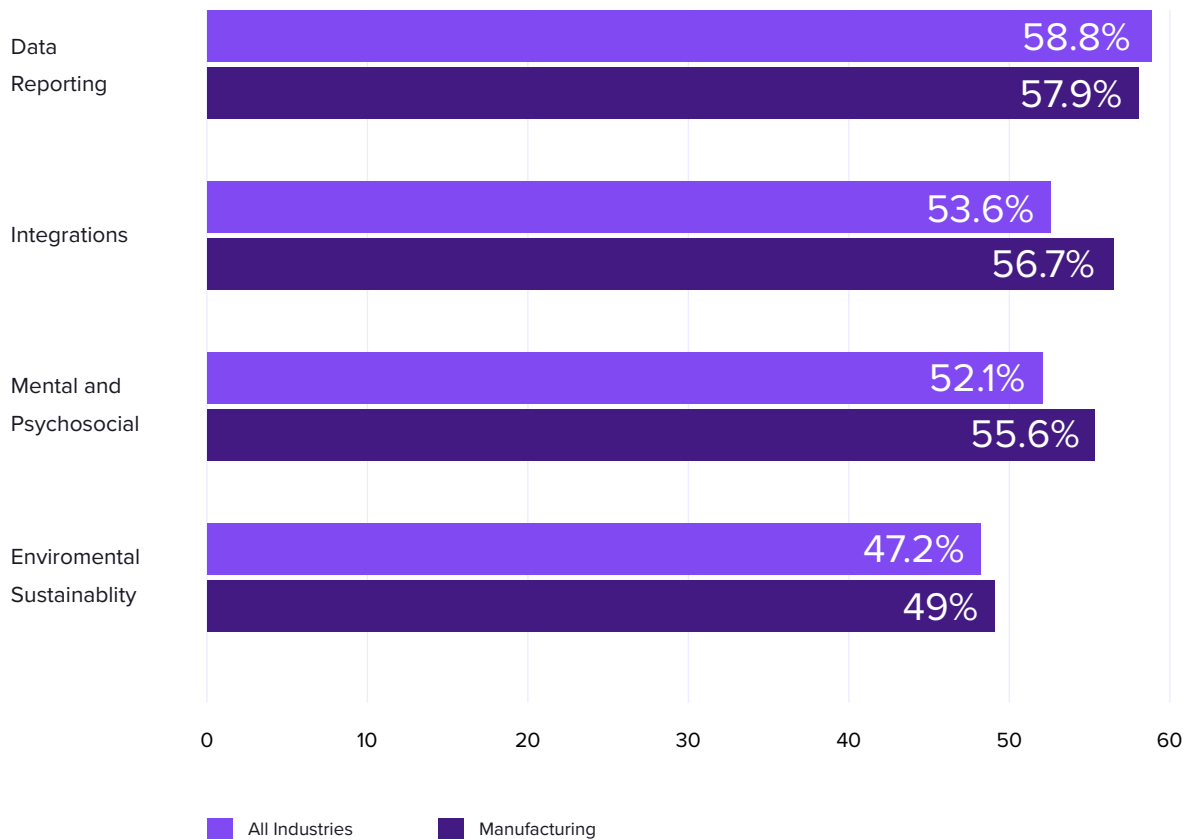
Single Platform Enables Real-Time Visibility, and Data Analytics Across Assets and Workforce

Utilities firms need connectivity — creating a network — across the EHS ecosystem. This enables real-time visibility across all EHS activities — combined with real-time data analytics which allows them to take corrective action swiftly, meet ESG requirements — and improve employee safety. They also need to increase employee engagement and ensure compliance with company policies and legislation, in a dynamic working environment. For example, they need to quickly alert remote workers of any predicted weather event that might impact their safety.

They can also use condition data from assets to indicate if there may be a safety risk associated with an installation. **According to the OHS Director of a utility with more than 10000 employees, "Condition data is critical for us to understand the risk posed by our equipment and assets".** Audits and monitoring to ensure pre-departure checks are completed and that assets are inspected, require particular attention, and can leverage IoT sensors and third-party applications.

EHS leaders need to use technology to take a platform-based approach to EHS risk mitigation in the utilities industry. This means that the industry needs to:

Have visibility across EHS activities and all assets and workers. Ongoing monitoring is required with corrective action taken instantly. Indeed, a single universal view of risk is critical in utilities given the distributed and increasingly decentralised nature of this sector. According to the GERI study, only 16% of organisations have a single unified view of risk across their assets and workforce.

Have a consistent and unified view of all activities across workforces, sites and installations. All documentation and data should be found in one place. Management and individual workers need visibility of all EHS processes and their implementation. Increasingly utilities firms need to go beyond monitoring and have greater observability that offers contextual insights.

Rapidly respond to incidents from remote locations and ensure reporting to appropriate regulatory authorities. Compliance controls, critical controls and risk registers need to be on one platform for automated and integrated cross-referencing and actioning. The GERI study also reveals that only 18% of organisations globally have centralised compliance management systems in place that apply to all assets and workers.

Training and certification. Employees and contractors need training to ensure compliance and safety across the organisation. Modern centralised EHS platforms allow the workforce to engage with the EHS function from any device and from any location.
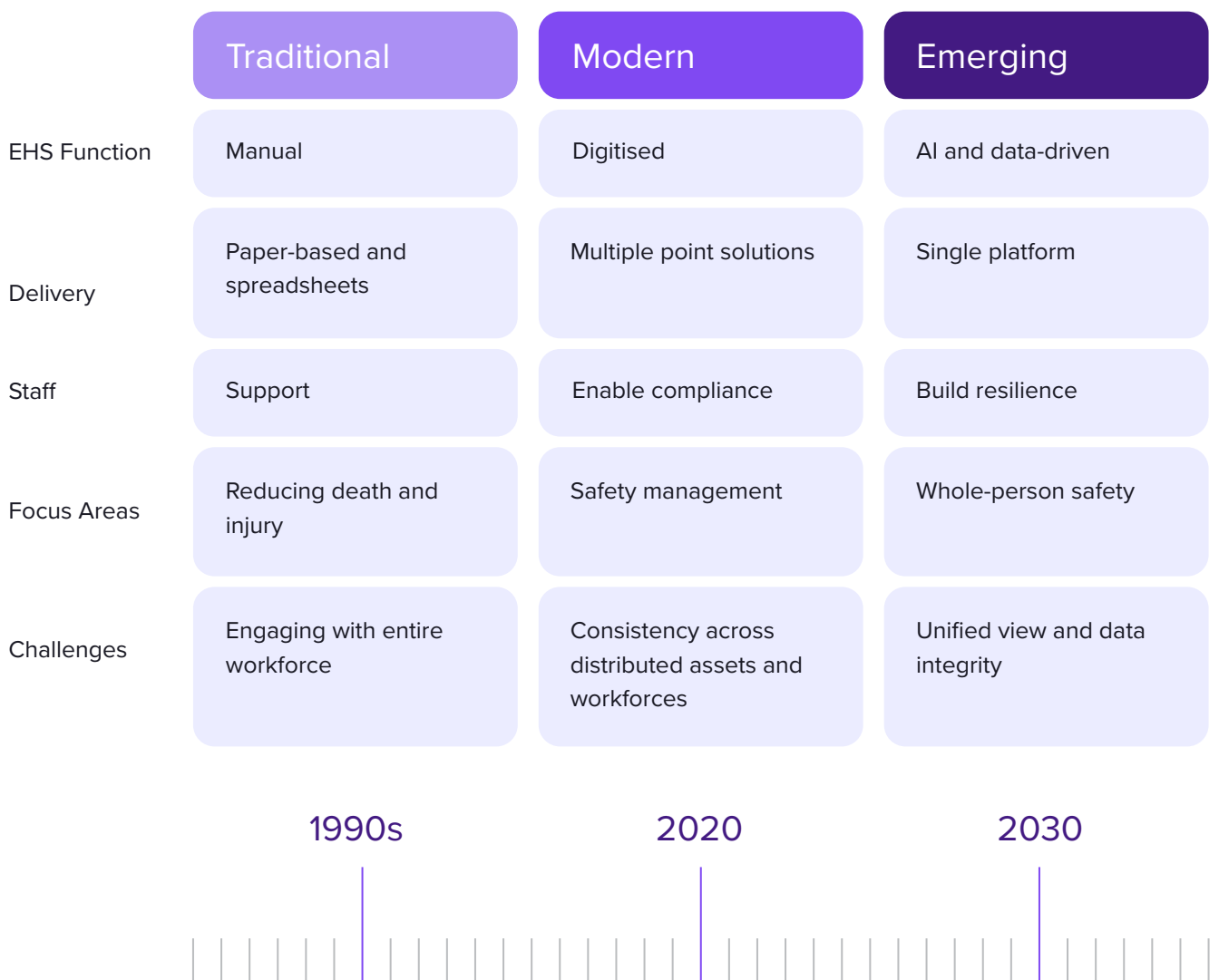
Emerging EHS Trends in the Utilities Industry

As complexity increases within the Utilities sector, so does the move to more advanced EHS processes and systems. These trends are summarised below.

Figure 3
The Evolution of the EHS Function

	Traditional	Modern	Emerging
EHS Function	Manual	Digitised	AI and data-driven
Delivery	Paper-based and spreadsheets	Multiple point solutions	Single platform
Staff	Support	Enable compliance	Build resilience
Focus Areas	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

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