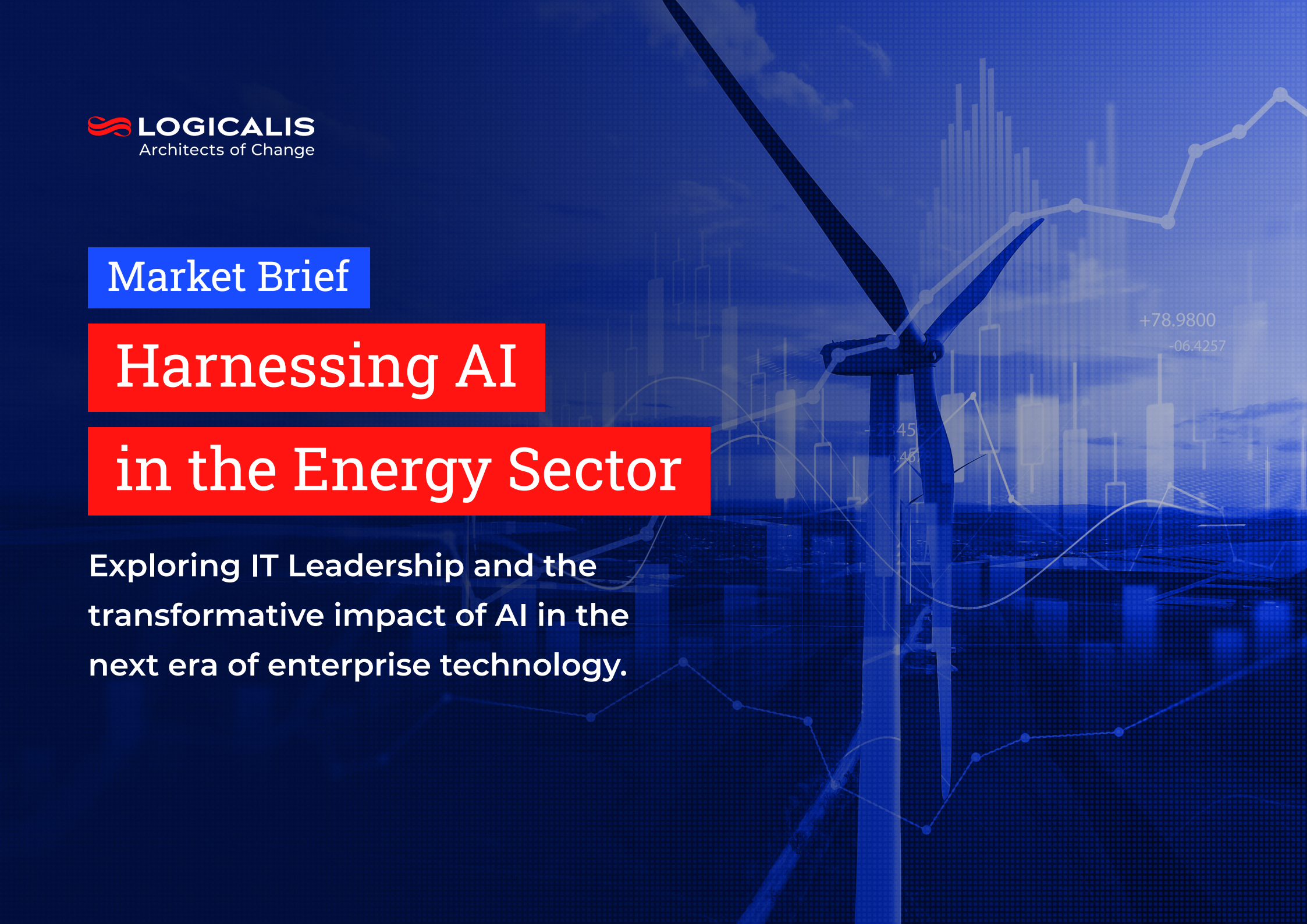
LOGICALIS
Architects of Change

Market Brief

Harnessing AI in the Energy Sector

Exploring IT Leadership and the transformative impact of AI in the next era of enterprise technology.



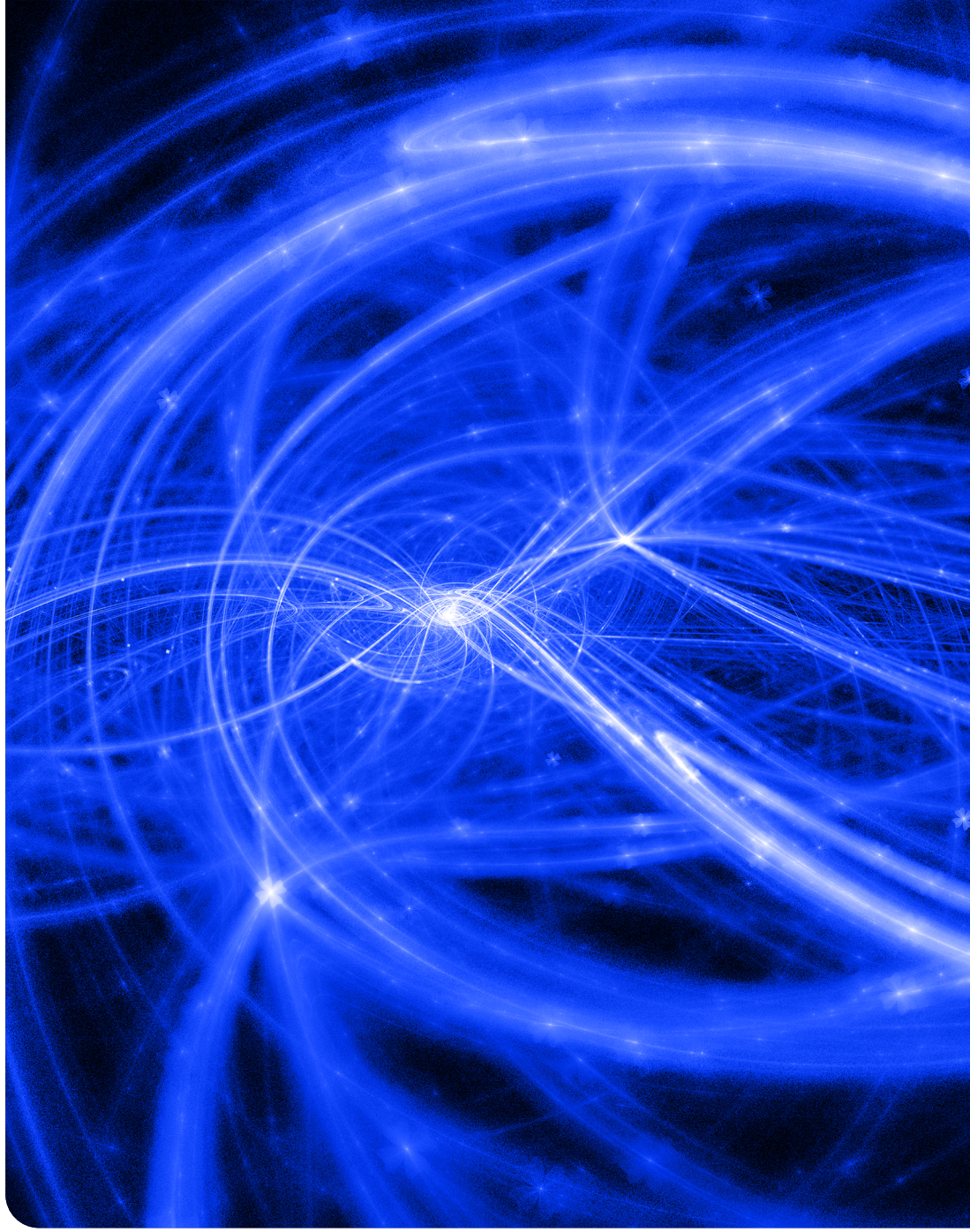
Introduction

AI is profoundly transforming the energy sector, driving significant investment and rapid adoption among leading organisations. Recent findings from McKinsey reports that global oil and gas companies invested over $1.9 billion in AI technologies in 2025 alone, with investment projected to increase by more than 10% annually for the next five years.

AI is revolutionising operations by optimising workflows, enhancing safety, and supporting sustainability initiatives. According to The Boston Consulting Group, energy companies fully leveraging AI could deliver incremental profits between 30% and 70% of their EBIT over the next five years, whilst accelerating their carbon footprint reduction.

Energy companies fully leveraging AI could deliver incremental profits between **30% and 70% of their EBIT** over the next five years.

This Market Brief features insights from industry leaders and compelling research findings from the Logicalis Global CIO Report 2026, examining how Energy sector CIOs are shaping this new frontier: Setting vision, governing risk, building enterprise intelligence, and architecting a future powered by autonomous systems.



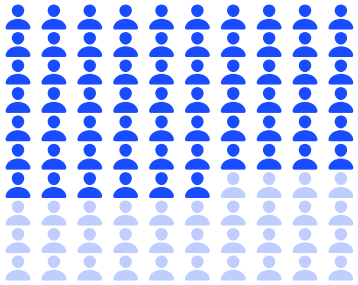
Setting the AI Agenda

The energy sector stands at the forefront of a transformational shift, with AI rapidly reshaping the landscape.

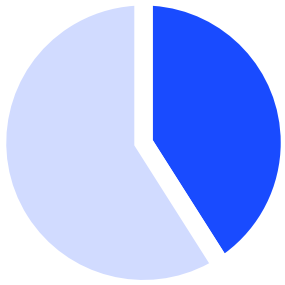
The 2025 Gartner CIO and Technology Executive Survey indicated that 94% of power and utility CIOs plan to increase their AI investments in 2025, with an average spending increase of 38.3%.

88% of Energy CIOs say their appetite for AI has increased in the last 12 months.

62% (11% above global average) believe AI adoption is already moving too fast.



39% of global CIOs say energy impact efficiency is prioritised in AI deployment.



The Logicalis Global CIO Report 2026, backs up these claims, revealing that an impressive 88% of Energy CIOs have intensified their AI adoption over the past year, underscoring a collective recognition of AI's power to revolutionise operations and drive strategic advantage. This surge signals an industry-wide commitment to leveraging AI as a catalyst for innovation and competitiveness.

Such extraordinary investment and adoption reflect the sector's determination to harness AI's potential—optimising workflows, enhancing safety, and accelerating sustainability initiatives.

Whilst ambition is overwhelming, 62% of Energy CIOs feel the pace is too fast (global average 51%), outstripping infrastructure, and 64% lack confidence in their organisation's strategic roadmap for the coming years.

Environmental considerations add a further dimension to this responsibility. As AI usage expands, its energy demands and environmental footprint are becoming harder to ignore. Globally, just 35% of Energy CIOs' counterparts express strong confidence that their organisations consistently track and manage the environmental effects of their AI initiatives. And just 42% say energy efficiency is prioritised in AI deployment.

This marks a significant shift in the scope of AI leadership. CIOs are no longer just responsible for the financial and security costs of AI but are increasingly responsible for its sustainability implications.

From Confidence to Capability

Over **two thirds** of CIOs don't strongly believe they can scale AI beyond pilots.

AI is already delivering value in specific areas, increasing automation in safety and mission-critical systems. The strongest impact is being seen in service delivery (49%), predictive analytics and forecasting (44%) and customer experience and innovation (both 43%).

These are meaningful gains, but what they don't yet show is consistency. AI is working, but it is not yet embedded, and this is where confidence begins to soften.

When CIOs consider their ability to move from early success to organisational wide impact, over two-thirds are not strongly confident they can scale AI beyond pilots and proof of concepts (64%). And IDC projects that by 2030, fewer than half will have mature agent architecture and lifecycle management in place.

Gaia Gallotti, research director for IDC's Energy Insights, says the biggest barrier to scaling agentic AI in core energy and utility operations is not the technology itself but the underlying data environment. The Logicalis CIO Report reinforces this. The most frequently cited constraint (94%) is not funding, but data challenges, followed closely by regulatory and compliance (93%) and lack of internal technical skills (90%).

What the research suggests is that AI maturity is less about confidence in the technology and more about capability and organisational design. For CIOs, the challenge now is to turn early success into something more durable.

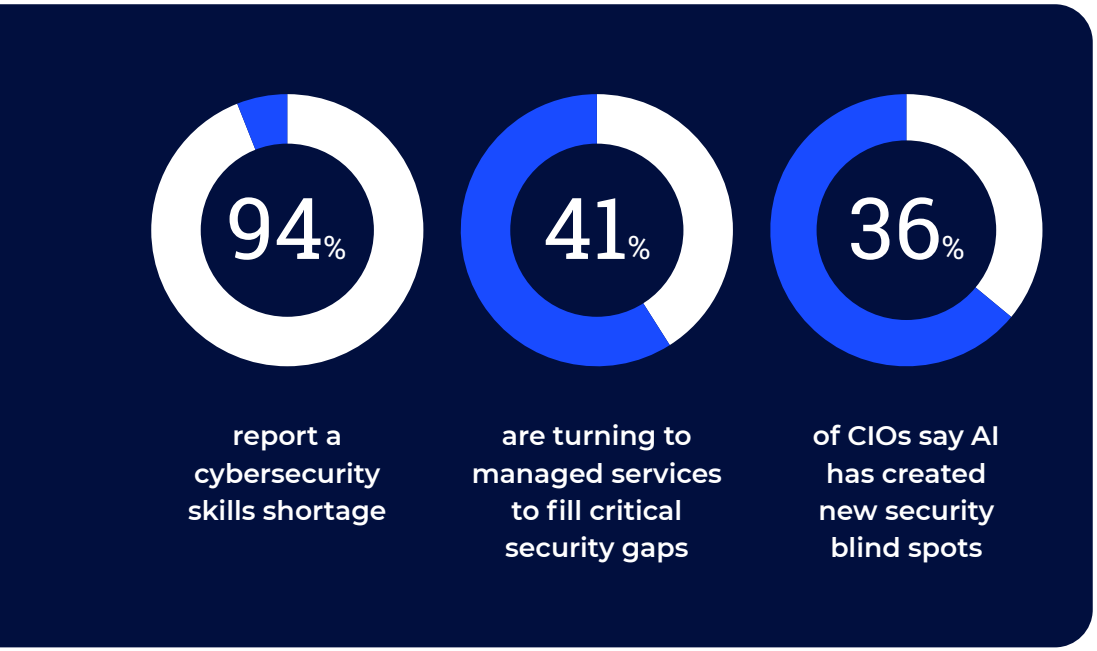
The State of AI Security

AI is changing the nature of risk, despite AI's potential to tackle cyber threats, it is increasingly becoming part of the threat landscape itself, introducing new vulnerabilities that are harder to trace and harder to own.

Over a third of CIOs (36%) say AI has created new security blind spots, while a similar proportion believe it has reduced their organisation's ability to detect breaches and cyber-attacks effectively (39%). More concerning still, 42% report that incident response times have worsened.

While teams grapple with AI-driven vulnerabilities, risks from a lack of AI governance are also emerging. Only 38% of CIOs say they have full visibility of AI tools in use across their organisation, two-thirds admit employee training on AI risk management is insufficient, and 62% say employees jeopardise data security through AI use.

Underlying these challenges is a fundamental skills gap, 94% of CIOs report a cybersecurity skills shortage. To tackle this, half are prioritising skill-based hiring and workforce upskilling through advanced certifications and training, while 41% are turning to managed services to fill critical security gaps.



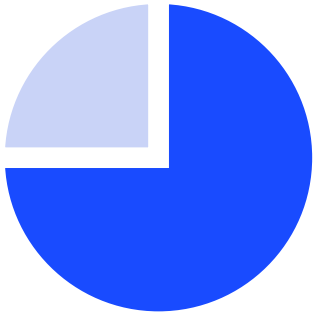
"AI is a powerful force in cybersecurity, but without the right skills and governance, it can create more vulnerabilities than protection. CIOs have the challenging task of defending their organisations against AI-driven threats, but also from the risks posed by the very AI tools meant to safeguard them.
Given skills shortages and an accelerating threat landscape, CIOs need strong governance, clear visibility, and trusted partnerships built into every AI initiative from the start to stay secure."

Bob Bailkoski, Global CEO of Logicalis Group

The Next Frontier

In an industry characterised by high stakes, remote operations, and vast data, the possibilities for generative and agentic AI are immense.

Investment patterns already reflect this transition. Generative AI remains firmly on the agenda, with three quarters (75%) of organisations planning further investment in the next 12 months.



75%

of Energy sector CIOs are planning further investment in generative AI in the next 12 months

But interest is moving quickly beyond it. 64% of Energy sector CIOs expect to invest in agentic AI, signalling a growing appetite for systems that can execute tasks, make decisions and coordinate activity with minimal human intervention.

51%

believe generative and agentic AI will disrupt business models within the next two years

Beyond AI, CIOs are also being asked to think across multiple horizons at once. More than half believe generative AI and agentic AI will disrupt business models within the next two years (51%). At the same time, quantum computing is already appearing on strategic roadmaps, with almost a third (30%) expecting it to have a similar impact.

Adopting these latest AI technologies all have consequences for operating models. The growing reliance on Managed Service Providers reflects a recognition that few organisations can sustain the pace of change alone. Nearly all CIOs (95%) expect to use MSPs in the coming years.

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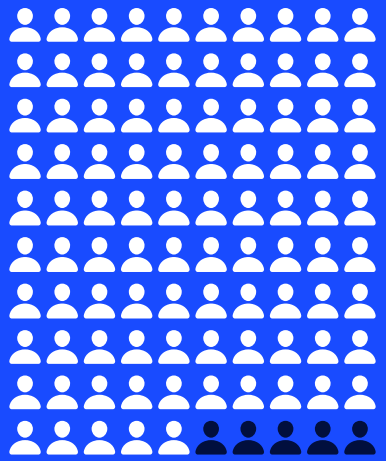

For CIOs this demands a different kind of leadership. Less about transformation projects, more about institutional design. Less about deploying new tools, more about shaping environments in which autonomous systems, external partners and human teams can coexist without eroding accountability.

Conclusion

The Energy industry stands at a pivotal moment as it navigates the dual forces of technological innovation and heightened risk.

With operations spanning remote locations and handling vast quantities of sensitive data, the sector is uniquely exposed to both the opportunities and threats posed by AI.

AI brings both opportunities and challenges, and this Market Brief highlights the sector's pragmatic approach. CIOs recognise that effective AI requires guidance and reliability, not unchecked deployment.

Energy leaders should focus on the following core principles to reach their objectives:

Establish a Clear AI Strategy: Define a long-term AI roadmap aligned with business objectives, ensuring that technological adoption supports sustainable growth, operational efficiency, and regulatory compliance.

Embed Robust Governance: Implement frameworks to monitor AI deployments, address ethical considerations, manage data security, and ensure transparent decision-making throughout the AI lifecycle.

Foster Collaborative Ecosystems: Build partnerships with technology providers, academic institutions, and industry peers to share best practices, accelerate innovation, and stay ahead of emerging trends and risks.

Accelerate Sustainability Initiatives: Leverage AI to drive decarbonisation, optimise resource usage, and track environmental impact.

Prioritise Talent Development: Invest in upskilling existing teams and attracting AI specialists to bridge the capability gap, fostering a culture of innovation and continuous learning.

Further reading:

Read the full Logicalis Global CIO Report 2026 here.

A CEO perspective – discover insightful perspectives from our regional CEOs on the key findings of this year's CIO Report here.

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At Logicalis, we harness our collective technology expertise to help our clients build a blueprint for success, so they can deliver sustainable outcomes that matter.

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