



Fuelling *the Future* of Energy

Driving digital
innovation in oil & gas

Volatility, decarbonisation, investor scrutiny, digital disruption... this is an age of relentless change

In this landscape, “adaptation” doesn’t quite cover the imperative for today’s oil and gas operators. Instead, I’d go as far as calling it reinvention. Legacy infrastructure and mounting cost pressures demand intelligent, holistic transformation. This transformation is further complicated by the evolving fiscal environment, which shapes capital allocation and operational priorities. The industry faces the dual challenge of sustaining safe, reliable output from ageing assets while accelerating the transition to a low-carbon future. And it really is a challenge.

Key shifts are reshaping the sector. The energy transition is gathering pace, with UK upstream targeting a 50% reduction in operational emissions by 2030 and a net zero basin by 2050¹. This is fundamentally altering capital allocation and supply chain priorities. At the same time, efficiency pressures and cost sensitivity are driving the move from digital pilots to scaled deployment of artificial intelligence (AI) and automation. Predictive maintenance, digital twins, and advanced analytics are now central to emissions monitoring and operational optimisation.

All of this to say, we understand what you’re up against. At Capgemini, we recognise these converging disruption vectors and partner with clients to deliver end-to-end intelligent reinvention. From modernising production systems and accelerating digital in brownfield environments, to building the capabilities required for emissions reduction, we help clients unlock value, resilience, and a sustainable licence to operate in a rapidly evolving energy landscape. From vision to value, we make it real. And we don’t stop until you see impact.

The energy transition requires a shift in mindset. It demands a re-engineering of the entire value chain. Together, we can fuse digital intelligence with decades of industry grit to help you move faster, operate leaner, and lead boldly into a low-carbon future.

Over the next few pages, we’ll show you how.



Mark Ewen
New Energy Sector Leader,
Capgemini UK



We recognise that clients across the industry are navigating five concurrent disruption vectors that threaten profitability, resilience, and licence to operate.

- 1. Ageing Assets & Complexity** – Decades-old infrastructure combined with complex field operations make reliability and uptime increasingly difficult to maintain. Average production efficiency fell to 77% in 2023, driven by a combination of maintenance overruns, market volatility, and regulatory changes.²
- 2. Regulatory & ESG Demands** – New reporting requirements, carbon pricing, and investor pressure are forcing operators to make sustainability actionable and auditable. Upstream emissions are down 28% since 2018, with a mandated 50% reduction by 2030 relative to the 2018 baseline.³
- 3. Decarbonisation Mandates** – Operators must decarbonise value chains without disrupting production, while scaling hydrogen, CCS, and renewables at speed. Record decommissioning spends of £2.4 billion in 2024 and a forecast of £27 billion between 2023 and 2032, with a total remaining decommissioning liability of £44 billion, signal a tightening window to decarbonise while maintaining production.⁴
- 4. Supply Chain & Margin Compression** – Volatile input costs, global supply risk, and increased transparency expectations are eroding margins. Production efficiency and unit operating cost benchmarks highlight sensitivity to outages and supply risk, reinforcing the need for predictive and integrated planning.
- 5. Talent Drain & Skill Shift** – A generational skills gap, coupled with the race for digital talent, is leaving critical roles unfilled and transformation efforts underpowered. UK energy faces an ageing workforce and cross-sector competition for digital skills, which is slowing programme velocity.

¹<https://www.gov.uk/government/publications/north-sea-transition-deal>

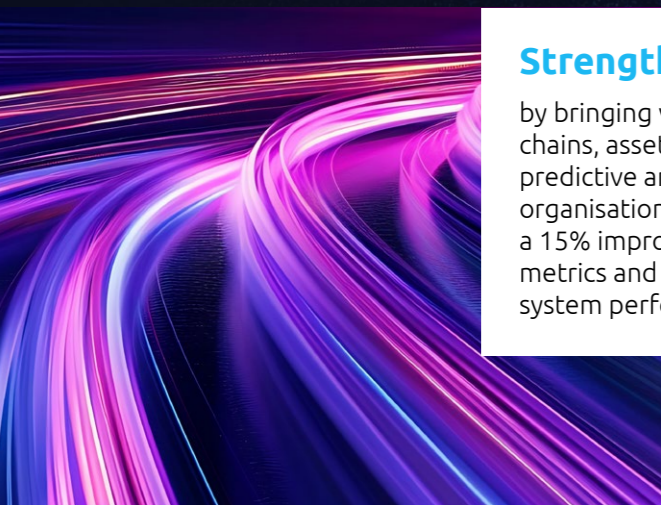
²<https://www.nstauthority.co.uk/news-publications/2023-benchmarking-dashboards-production-efficiency-and-unit-operating-cost/>

³<https://www.nstauthority.co.uk/media/nugh4i0q/emissions-monitoring-report-2024.pdf>

⁴<https://www.nstauthority.co.uk/regulatory-information/decommissioning/cost-estimate/>

This is your opportunity to lower costs, improve quality, and deliver on time.

Yes, the transition towards sustainable energy is challenging. But this disruption also provides several huge opportunities to drive real, measurable outcomes. We partner with energy leaders to enable rapid, scalable, and proven technology, deep engineering, and trusted delivery so that you can:



Strengthen resilience

by bringing visibility and agility across supply chains, assets, and field operations with predictive analytics and digital twins. On average, organisations working on digital twins have seen a 15% improvement in key sales and operational metrics and an improvement upwards of 25% in system performance⁶.

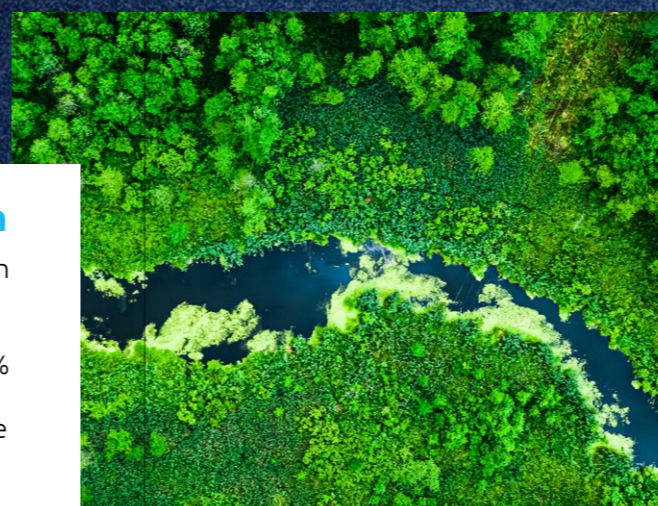


Modernise infrastructure and reduce downtime

by integrating cloud, data, and AI. For example, our work with Baker Hughes prevented 26,000 hours of downtime in one year, demonstrating the potential impact of Industrial Internet of Things (IIoT) solutions⁶.

Control costs & boost efficiency

by automating core processes and optimising end-to-end operations. Leveraging robotic process automation, artificial intelligence, and smart analytics in these areas could help you achieve a 40% reduction in people operations cost⁷.

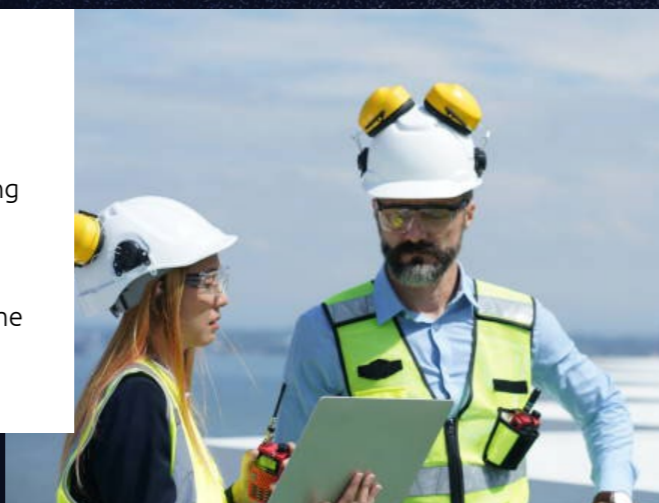


Accelerate decarbonisation

with emissions monitoring, electrification pathways, and flare and vent reduction, aligned to NSTD milestones. According to the Capgemini Research Institute, 53% of organisations that have embedded emissions data into decision-making have accelerated their net zero journey¹⁰.

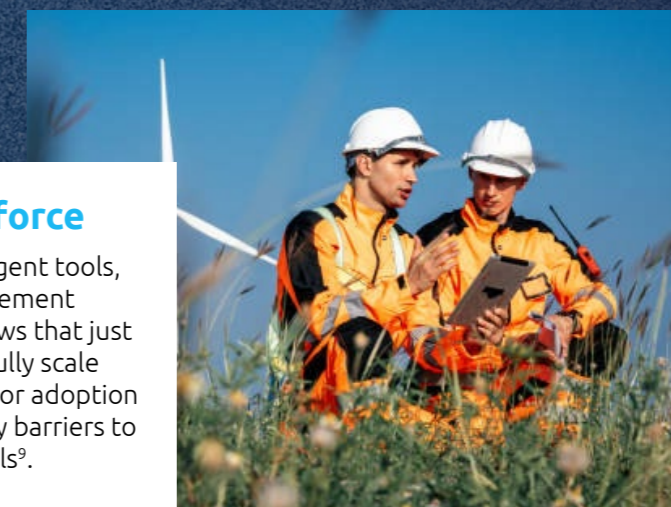
Drive decommissioning excellence

using data and digital to reduce decommissioning time and cost, improving portfolio scheduling, and strengthening assurance. AI implementation can significantly reduce decommissioning expense and increase efficiency, with some case studies reporting up to 35% cost reduction and 60% efficiency gains¹¹.



Empower your workforce

through digital training, intelligent tools, and embedded change management frameworks. Our research shows that just 16% of organisations successfully scale automation initiatives, with poor adoption and lack of training cited as key barriers to realising value from digital tools⁹.



⁶ <https://www.capgemini.com/news/client-stories/digital-technology-manufactures-a-new-future-at-bhge-plants/>

⁷ <https://www.capgemini.com/services/enterprise-management/intelligent-business-operations/intelligent-process-automation/>

⁸ <https://www.capgemini.com/insights/research-library/digital-twins/>

⁹ <https://www.capgemini.com/insights/research-library/organizational-change-management-the-missing-link-in-intelligent-automation/>

¹⁰ <https://www.capgemini.com/gb-en/insights/research-library/carbon-management-a-catalyst-for-innovation-and-continuous-improvement/>

¹¹ https://www.academia.edu/130130385/Artificial_Intelligence_for_predictive_analysis_efficiency_improvement_and_reduction_in_carbon_footprint_during_decommissioning_and_site_remediation_in_oil_and_gas_fields

Deliver impact across capital efficiency, operational resilience, customer growth, and sustainability



Engineering & Capital Projects

Maximise ROI on Capital Investments

We help leaders de-risk major projects and accelerate time to value.

Our Capabilities

- Portfolio optimisation and value screening
- Engineering design efficiency and digital governance
- Global delivery models to reduce cost and increase agility

Your Benefits

Faster project delivery, lower CAPEX, and improved asset performance.



Operations Management

Drive Operational Excellence & Asset Uptime

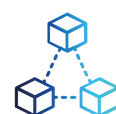
We modernise core operations to improve reliability, reduce emissions, and extend asset life.

Our Capabilities

- AI driven production optimisation
- Predictive maintenance and equipment reliability
- Electrification and late life asset strategies

Your Benefits

Improved reliability, reduced emissions, and extended asset life.



Asset Management

Optimise Asset Performance and Unlock Long-Term Value

We help complex energy assets perform under pressure by combining engineering depth, digital platforms, and predictive analytics.

Our Capabilities

- Lifecycle strategy & optimisation
- Predictive maintenance and reliability
- IoT integration and performance benchmarking
- Digital twins to simulate degradation and extend life

Your Benefits

Uplift in utilisation, reduced unplanned downtime, and increased asset life.



Corporate Transformation

Align Strategy, Structure, and Execution for Sustainable Growth

We help oil and gas companies navigate digital disruption and operational complexity with agile, data-driven transformation.

Our Capabilities

- Business and asset strategy
- Operating model redesign
- M&A integration
- Process automation and change management

Your Benefits

Faster execution of strategic priorities, streamlined cost base, and agility in the energy transition.



Digital, Data & AI

Enable Intelligent, Secure Decision-Making

We build the digital backbone for scalable, data-driven operations.

Our Capabilities

- Gen AI, analytics, and digital twins
- Cybersecurity and AI-driven production optimisation, cloud-native platforms, and IT/OT convergence
- AI powered engineering and business model innovation

Your Benefits

Faster decisions, reduced risk, and future-ready operations.



Systems & Applications Management

Modernise IT to Support Growth

We transform legacy systems into agile, cloud native platforms.

Our Capabilities

- SaaS and cloud transformation
- AI enabled software development
- IT carve outs and M&A integration

Your Benefits

Lower IT costs, faster innovation cycles, and scalable digital services.



Sustainability & Renewables

Accelerate the Energy Transition

We enable leaders to meet ESG goals and scale low carbon operations.

Our Capabilities

- Carbon accounting and emissions reporting
- Renewables operating models and M&A support
- Energy procurement and cost optimisation

Your Benefits

Regulatory readiness, investor confidence, and long-term sustainability.



Retail, Customers & Partnerships

Unlock New Revenue & Customer Loyalty

We help energy retailers and mobility providers reimagine customer engagement.

Our Capabilities

- EV infrastructure and "forecourt of the future"
- Loyalty programs and digital retail platforms
- Strategic partnerships and new business models

Your Benefits

Increased customer lifetime value and diversified revenue streams.

We'll help you turn vision into real,

validated,

scalable solutions



At Capgemini, we have a long-standing track record of helping oil and gas companies design, build, and scale future-ready operations. By fusing deep engineering expertise with digital innovation, we deliver real-world energy outcomes. With 420,000 experts worldwide, our teams bring industry knowledge, field experience, and advanced tools, like digital twins, AI agents, and industrial cloud platforms, to optimise performance and reduce emissions. We bring you integrated value, from concept to deployment, that drives measurable impact."



Paul Haggerty,
UK Market Head of Energy Transition
& Utilities, Capgemini



What sets us apart?

1. The breadth of our business



Engineering meets digital

Through **Cappgemini Engineering**, we bring decades of oilfield engineering expertise, asset integrity, industrial IoT, and embedded systems. Combined with digital capabilities like AI/ML for seismic data and digital twins for upstream assets. No other consultancy fuses deep engineering with digital transformation at this scale.



Innovation that works in the field

With **frog, part of Cappgemini Invent**, we design intuitive, human centered tools for field operators, from control room interfaces to mobile apps, ensuring adoption and safety. We design for adoption and safety, so digital change delivers in the field.



Strategy that scales

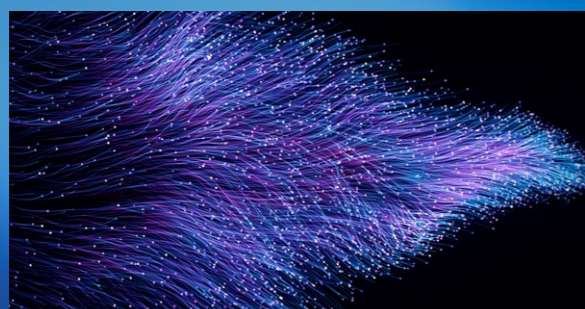
Cappgemini Invent bridges c-suite vision with operational execution. We help clients move from legacy SCADA to cloud native, AI-powered operations, while embedding ESG and carbon reporting frameworks. We deliver transformation that's both strategic and measurable.



Breakthrough tech, built fast

Cambridge Consultants, part of Cappgemini Invent, brings deep tech innovation, AI for subsurface imaging, autonomous systems, and next gen sensing platforms. We prototype and scale solutions others only imagine. We prototype and industrialise at pace, from concept to scaled deployment.

2. Global scale, local expertise



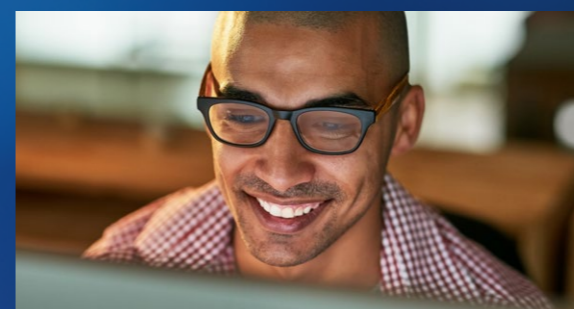
With delivery hubs across India, LATAM, and Europe, we offer cost effective, scalable transformation programmes without compromising on domain depth or innovation.

3. A vast partner ecosystem



We put people and partnerships first. Through our global network of technology leaders, including **Microsoft, Siemens, AWS, and Salesforce**, we drive faster innovation, reduce risk and deliver greater impact, helping you stay ahead in a fast-changing market.

4. Insight that shapes the future



The Cappgemini Research Institute

part of Cappgemini Invent, delivers world-class thought leadership on technology, business, and sustainability. Ranked #1 for research quality six years in a row by Source Global Research, we uncover trends and actionable insights that help organisations navigate disruption and seize new opportunities. Our research turns foresight into impact, informing strategies, accelerating transformation, and driving measurable results.



Consistently recognised by analysts and trusted by industry

Gartner

Leader in Service Integration & Management (SIAM), 2024. ¹²

Forrester

Leader in Application Modernization & Multicloud Managed Services, Q1 2025. ¹³

Everest Group

Leader in Sustainable Engineering Services, 2025. ¹⁵

Verdantix

Leader in Climate Change Consulting, 2025. ¹⁴

Everest Group

Leader in AI and Generative AI Services PEAK Matrix® Assessment 2025

The bottom line

We help oil & gas companies modernise field operations by:



Improving safety and efficiency



Accelerating decarbonisation



Launching breakthrough technologies



Delivering measurable business value

¹² <https://www.cappgemini.com/news/analyst-recognition/gartner-recognizes-cappgemini-as-a-leader-in-its-2024-gartner-magic-quadrant-for-service-integration-and-management-siam/>

¹³ <https://www.cappgemini.com/news/analyst-recognition/cappgemini-named-a-leader-in-the-forrester-wave-application-modernization-and-multicloud-managed-services-q1-2025/>

¹⁴ <https://www.cappgemini.com/news/analyst-recognition/cappgemini-has-been-recognized-as-a-leader-by-independent-analyst-firm-in-green-quadrant-for-climate-change-consulting-2025/>

¹⁵ <https://www.cappgemini.com/news/analyst-recognition/cappgemini-recognized-as-a-leader-in-everest-groups-sustainable-engineering-services-peak-matrix-assessment-2025/>

Our proven track record of success

Trusted by the world's leading oil and gas companies, our proven delivery has helped companies unlock:

\$5m

annual savings through SAP modernisation

26,000 hours

of prevented downtime across industrial IoT deployments

10x

faster digital twin deployment for ITER and offshore platforms

51%

efficiency gain in refinery logistics through data integration

Chevron Phillips Chemical

Making operations more intelligent through digital transformation with Chevron Phillips Chemical

Cappgemini brings data, AI, cloud, engineering, and industry experience to deliver business value.

Client challenge

CPChem sought to enhance its use of digital tools and expand cloud capabilities to drive transformation.

Solution

Cappgemini collaborated with CPChem to design and build a modern data and AI platform on Microsoft Azure, enabling scalable operational AI.

Benefits

- 70% of applications transitioned to the cloud, dramatically improving reliability
- New digital tools boosted reliability, safety, production, and customer experience
- Plant-optimisation tool increased supply chain insight and reliability

CEPSA's Palos de la Frontera

Driving maintenance innovation with 5G at CEPSA's Palos de la Frontera refinery

CEPSA partnered with Cappgemini and Vodafone to pilot a 5G-enabled digital assistance solution, transforming maintenance operations at its Palos de la Frontera refinery.

Client challenge

CEPSA needed faster, data-driven decisions during maintenance, using real-time information such as temperature and pressure. Traditional processes lacked immediacy and remote support, limiting efficiency.

Solution

Cappgemini implemented a pilot operator assistance system powered by 5G, IoT sensors, and augmented reality. The solution included video streaming and AWS integration, enabling technicians to share live visuals and receive expert guidance remotely.

Benefits

- High reliability and ultra-low latency
- Real-time decision-making with enriched data
- Improved maintenance operations
- Remote support via video calls

Eneco eMobility

Supercharging customer care with Generative AI for Eneco eMobility

Working with Cappgemini, the charging services provider boosted agent productivity and enhanced the client service experience.

Client challenge

Rapid growth led to increased pressure on customer service, requiring a solution for better, faster, and more cost-effective support.

Solution

Cappgemini implemented Microsoft's Digital Contact Centre and Copilot in Dynamics 365, powered by GenAI, to improve satisfaction and productivity.

Benefits

- Increased customer and employee satisfaction
- 50% reduction in average wrap-up time
- Higher case throughput



Baker Hughes plants

Manufacturing a new future with digital technology at Baker Hughes plants

Partnering with Capgemini, Baker Hughes implements an Industrial Internet of Things (IIoT) solution that transforms shop floor processes and the Manufacturing Execution System.

Client challenge

Baker Hughes needed greater visibility and real-time management of manufacturing processes.

Solution

Capgemini deployed an Industrial Internet of Things (IIoT) solution, integrating data from all devices for enhanced insight and control.

Benefits

- Real-time management and visual metrics dashboards for nearly 50 users
- Prevention of 26,000 hours of downtime in 2017 (across all BH plants in Italy)
- 12% increase in machine utilisation within five months

National Gas

Transforming in-house development capabilities through Microsoft Azure cloud environment with National Gas

National Gas partnered with Capgemini to develop a fully automated cloud environment in which to build out development platforms and tools.

Client challenge

National Gas required a secure, automated cloud migration to support developers and data scientists, meeting tight deadlines and scalability needs.

Solution

Capgemini designed and implemented a fully automated infrastructure and Microsoft Azure Virtual Desktops.

Benefits

- Greater flexibility and scalability for future demands
- Reduced costs and operational complexity

Major oilfield services provider

Accelerating purchasing and rapid collections for a major oilfield services provider

Capgemini utilises Business Insightful Services with ADMnext to expedite P2P processes and R2R month-end closures.

Client challenge

The provider aimed to improve operational efficiency in Procure-to-Pay (P2P) and Record to Report (R2R) functions for suppliers, employees, and customers.

Solution

Capgemini used Business Insightful Services with ADMnext to streamline P2P and R2R processes.

Benefits

- Smooth transfer of 100,000 open invoices
- Eight-hour monthly reduction in AP ERP system downtime
- 50% reduction in GL report execution time

Explore more client success stories and see how we can answer your specific business challenges.

Get in touch to unlock
value from your

data, assets, *and* operations

Our energy experts are here to help.
energy.gb@capgemini.com

Whether your vision is for reducing emissions or driving digital change, we'll help you make it real. And we'll help get you there faster.

About Capgemini

Capgemini is an AI-powered global business and technology transformation partner, delivering tangible business value. We imagine the future of organizations and make it real with AI, technology and people. With our strong heritage of nearly 60 years, we are a responsible and diverse group of 420,000 team members in more than 50 countries. We deliver end-to-end services and solutions with our deep industry expertise and strong partner ecosystem, leveraging our capabilities across strategy, technology, design, engineering and business operations. The Group reported 2024 global revenues of €22.1 billion.

Make it real | www.capgemini.com

