



**GETI**  
Global Energy Talent Index



energyjobline

# The Global Energy Talent Index Report

# 2024



# Welcome to GETI 2024

The Global Energy Talent Index (GETI) was launched in 2017 to chart emerging trends across the global energy workforce. GETI has since drawn on insights from tens of thousands of professionals to create a comprehensive map of a changing energy landscape and give companies the tools to retain and refresh their skills base. This year's report explores how the rise of artificial intelligence (AI) is reshaping everything from job roles to skills in demand and whether workplace policies and training priorities are keeping up. We track the extent of AI adoption, popularity and policy awareness across the industry and anticipate the major risks and opportunities it presents.

This report surveys an industry on the cusp of a technological revolution. Popular technologies from AI language models to autonomous vehicles are transforming processes from production to inspection. A tech-savvy, young generation accustomed to tools including AI chatbots has turned access to innovations such as AI into a key driver of talent migration. As global skills shortages increase demands on existing workers, automating repetitive tasks could free up time and boost work/life balance. Amidst flatlining productivity, automation could augment the cognitive capabilities of all workers.

Yet AI also introduces many new risks. As algorithms consume great quantities of corporate data, they create cyber security concerns. With AI innovation happening at a rapid pace, there are risks of misuse or poor adoption. Automation could also come at the expense of human interactions. This year, we examine how this AI revolution will affect everything from job expectations to skills migration for energy workers. Amidst the many risks and opportunities, some key trends have begun to take shape.

- **Training must keep pace with AI** - Some employees are yet to read their employers' AI policies, and many fear that lack of training could result in misuse or poor adoption. If workers are not encouraged to develop in-demand AI skills from cyber security to communication, an AI skills gap may emerge in the future. Widespread confusion around which AI tools offer the best fit for each company also indicates a lack of education and knowledge as a barrier to adoption. Meanwhile, a lack of in-house AI skills could expose energy companies to new risks from data breaches to misuse, while increasing labour costs for in-demand roles such as cyber security.
- **AI adoption should be a focus for recruitment and retention** - Access to innovations such as AI is now among the top three drivers for relocation in some sectors and thus increasingly key to recruitment and retention. Energy workers are overwhelmingly optimistic about AI. They believe it could free time for soft skills development, strategic tasks and families while boosting job satisfaction, productivity, and career progress. Yet most workers still do not use AI in their jobs. With technology the most popular outside industry for energy workers to join, late adopters of AI risk losing their staff to more technologically innovative competitors.
- **AI will increase demand for human skills** - Far from replacing human workers, the march of the machines is expected to create new gaps in the market for human skills from cyber security to creativity. The majority expect AI to increase demand for technical skills from data science to software engineering. With machine learning models unable to think outside their training data, employers may put a premium on lateral thinking with projected demand for soft skills such as creativity and critical thinking. This could remould energy industry job specs and bring in new skills from creatives to robotics technicians.

Hiring managers can turn these trends to their advantage, by considering the following actions:

- **Align training with AI demands** - Employers should harness training to embed best practices across the workforce with AI awareness treated as equivalent to health and safety awareness. In-house skills development and certifications should be aligned with in-demand skills such as cyber security and robotics while completion could be tied to incentives to ensure in-house skills keep pace with the AI revolution. Companies could democratise digital skills through entry-level, user-friendly AIs such as ChatGPT, rules-based and explainable AIs that explain their workings or open-source AIs, lowering barriers to workforce adoption.
- **Roll out AI across the workforce** - With access to innovations such as AI now the biggest driver behind relocation among 18–24-year-old energy workers, rolling out AI across the workforce could help retain a new generation who value innovation. This could also help prevent an exodus of skills to popular adjacent industries. With ambitions for career progression one of the main reasons for leaving jobs, employers could also harness AI to free time for higher value-adding work and accelerate promotions. Automation could be used to boost job satisfaction and talent retention by augmenting the cognitive capabilities of all workers or reducing workloads to improve work/life balance.
- **Redesign employer brands to recruit from outside industries** - With over 90% across all sectors expecting AI to increase demand for human skills, energy companies should consider redesigning recruitment checklists and widen recruitment nets to attract the digital and soft skills needed for AI. Employer brands should emphasise innovation and ESG reinforced with values statements to attract a younger generation. For example, promoting the opportunity to apply AI to environmental challenges such as optimising renewable production could help attract a new wave of young, eco-conscious AI talent from industries such as technology.

Hiring managers can harness AI's potential by aligning training with AI demands, supporting the integration of AI across the workforce, and redefining employer brands to attract diverse talent. These steps will help energy companies not only keep up with technological advancements but become pioneers, attracting and retaining a skilled workforce ready for the challenges and opportunities of AI.



*Janette Marx,  
Chief Executive Officer  
at Airswift*

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# Methodology

This is the eighth annual edition of GETI, the energy industry's most established and comprehensive global workforce trends survey. Building on the success of the seven previous volumes, GETI 2024 draws on the views of almost 12,000 energy professionals in 149 different countries.

The 55-question survey was open for nine weeks and closed at the end of October 2023.

Airswift and a selection of sector experts subsequently analysed the data to pinpoint the key insights and themes to emerge from the responses across all sectors. Additionally, Airswift analysed key industry and internal compensation data in the following three tiers:

- Active contractor headcount
- Active candidates looking for their next role
- Third party data benchmarks

For ease of reference, salary and rate data has been averaged across all countries, but more specific salary information can be provided upon request.

## The human side of AI

From buzzword to bogeyman, AI is perceived in a variety of ways across all industries and energy is no different. However, facing digital distrust, mistrust and scepticism, employers looking to make the most of this evolving technology must strike the balance between capitalising on the benefits of AI and alienating the workforce.

With a widening skills gap to plug – particularly for technical skills such as data analysis, coding, and software development – companies must make the most of what AI has to offer. Further, with its automation capabilities driving 'operational excellence' – particularly for repetitive and time-consuming tasks – it is key to unlocking efficiencies and freeing up employees' time to work on more meaningful tasks.

But is AI still hype, or is it happening? If so, what are the most prevalent platforms? What do employees think of AI being introduced? Are they fearful or looking forward to enjoying new freedoms? If employees do have more time to focus on complex tasks, what skills might they benefit from developing?

This year's GETI 2024 aims to help answer these highly pertinent questions and many others. It aims to provide insights that will help hiring managers and professionals alike to better understand how AI is changing job roles, and what skills will be most prized in the future.

# About Airswift



Airswift is an international workforce solutions provider for STEM professionals in the technology and engineering sectors. For over 40 years Airswift has been transforming lives through the workforce solutions we provide, including talent acquisition, global employment and mobility, managed solutions, and consulting.

Today, we are an integrated team of 1,000 employees, across 70 offices and over 9,000 contractors. Driven by three corporate hubs in Houston, Manchester, and Singapore, we have a truly global approach and a reach that is unparalleled.

We provide strategic support to our customers, resulting in trusted partnerships that are aligned and efficient. Our team of experts are ideally positioned to meet your needs, whether that is finding top talent, mobilising people around the world, implementing an agile workforce strategy or improving decision-making for workforce planning. For more information, please visit our website at:

[www.airswift.com](http://www.airswift.com)

# Partner directory



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We focus on the Oil and Gas, Renewables, Power, and Nuclear markets as well as emerging technologies in EV, Battery, and Fusion. We are committed to sourcing the most talented professionals for our client recruitment campaigns and ensuring we offer the most exciting career opportunities for energy professionals.

Our job board is a significant value-add to any energy employer or employee on a global spectrum. Our highly engaged audience use Energy Jobline not only for their job search, but also for the latest energy news, training, events and contractor services.

Whether you are looking for a new job opportunity or looking to source the best talent in the energy market, please contact us to discuss in more detail.

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# Meet the experts



**Expert**

**Janette Marx**  
Chief Executive Officer  
at Airswift



**AI expert**  
**Ken Corriveau**  
Formerly the CIO  
at Omnicom Media Group



**Petrochemicals**  
**Sharon Barclay**  
Chief Human Resources Officer  
at Monument Chemical



**Renewables**  
**Adrian Smith**  
Executive Group Director  
of Transformation at Worley



**Power**  
**Wenche Kjøllås**  
Independent Director



**Oil and Gas**  
**Ian Langley**  
Chairman at Airswift



**Nuclear**  
**Andrew Crabtree**  
Founder at Get Into Nuclear



# AI and the Future of Skills in the Energy Industry

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# Renewables

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**Expert**

**Adrian Smith**

**Executive Group Director  
of Transformation at Worley**

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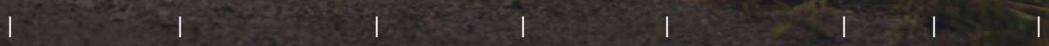
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# Renewables

Salaries are back above pre-pandemic levels as the energy transition accelerates, but renewables skills are being sought by other sectors and industries, including technology. Renewables are also in a state of flux as rapid AI adoption creates new risks and opportunities. Employers will need to ensure their policies, training, and skills keep pace with the AI revolution.

## Salaries

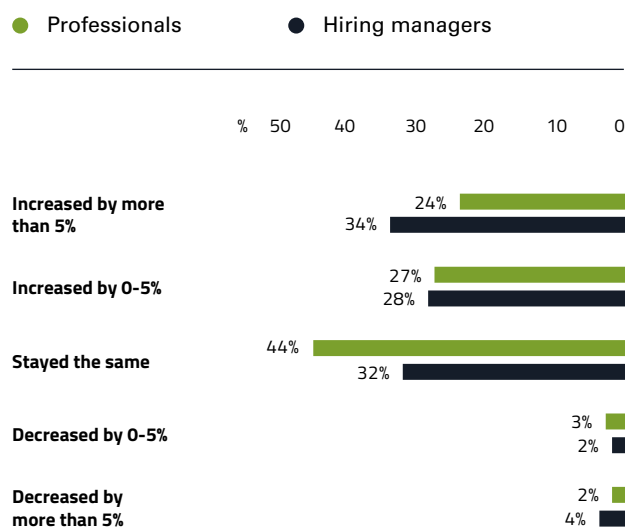
Amidst an accelerating clean energy transition, renewables salaries are on an upward trajectory, with 51 per cent of professionals reporting a pay rise compared to 47 per cent last year. Twenty-four per cent report a salary raise of five per cent or more compared with 20 per cent last year. Among engineers, pay increases have been even higher, with 54 per cent reporting a rise.

Hiring managers have an even sunnier outlook, with 62 per cent reporting a pay increase and 34 per cent reporting a rise above five per cent, a five per cent increase over the last two years.

Salary optimism also remains high, with 73 per cent expecting a pay rise next year compared with 74 per cent last year.

Janette Marx, CEO of Airswift, says: "A growing green skills gap has increased competition for talent, which is reflected in rising salaries. Pay is also rising to keep pace with high inflation and interest rates."

### PAY CHANGES REPORTED BY WORKERS AND HIRING MANAGERS IN THE LAST 12 MONTHS



**PERMANENT WORKER ANNUAL SALARY, USD (GLOBAL AVERAGE BASED ON SIX YEARS' EXPERIENCE)**

	Africa	Asia	Australasia	Europe	Latin America	Middle East	North America
<b>Biomass Engineer</b>	43,552	64,555	78,566	68,957	34,345	53,602	101,579
<b>Business Development Manager</b>	92,430	64,952	115,982	85,010	31,015	61,599	145,807
<b>Civil/Structural Engineer</b>	55,259	43,579	130,676	76,894	30,740	51,458	102,557
<b>Commercial Manager</b>	60,567	81,918	139,948	90,851	33,048	92,471	104,427
<b>Construction Manager</b>	90,226	74,054	176,106	74,608	46,392	77,936	90,384
<b>Design Engineer</b>	53,074	57,266	105,793	65,272	29,551	47,357	124,584
<b>Electrical Engineer</b>	62,879	55,322	114,862	68,253	32,111	71,056	98,818
<b>HSE Manager</b>	64,837	78,826	160,739	86,057	41,580	71,379	81,543
<b>Maintenance Engineer</b>	73,367	56,369	95,933	86,287	35,436	63,141	94,151
<b>Marine Engineer</b>	83,101	69,399	124,409	64,229	34,703	75,815	86,452
<b>Mechanical Engineer</b>	59,630	44,411	99,751	65,683	33,581	58,144	85,884
<b>Operations Manager</b>	64,828	67,864	102,936	76,899	70,596	76,460	83,686
<b>Project Engineer</b>	62,624	60,881	132,829	79,763	38,807	77,213	87,816
<b>Project Manager</b>	82,175	79,957	164,492	85,049	43,569	86,918	99,262
<b>QA/QC Manager</b>	60,024	65,041	178,885	93,445	43,690	77,135	75,566
<b>Renewable Energy Consultant</b>	46,206	80,922	119,449	69,497	45,338	63,077	78,709
<b>Solar Engineer</b>	46,830	47,398	110,783	53,094	32,025	48,234	94,949
<b>Wind Farm Project Manager</b>	52,386	75,390	194,978	57,280	38,507	70,819	77,416
<b>Wind Turbine Technician</b>	44,176	43,660	97,073	57,607	28,534	47,163	59,291

**CONTRACT WORKER DAY RATE, USD (GLOBAL AVERAGE BASED ON SIX YEARS' EXPERIENCE)**

	Africa	Asia	Australasia	Europe	Latin America	Middle East	North America
<b>Biomass Engineer</b>	311	461	539	505	248	401	726
<b>Business Development Manager</b>	502	500	674	550	221	441	1,041
<b>Civil/Structural Engineer</b>	394	371	642	525	213	539	763
<b>Commercial Manager</b>	388	617	743	700	237	653	613
<b>Construction Manager</b>	644	523	696	767	332	651	646
<b>Design Engineer</b>	379	409	547	455	211	421	755
<b>Electrical Engineer</b>	435	400	616	528	229	574	713
<b>HSE Manager</b>	424	565	658	559	354	549	680
<b>Maintenance Engineer</b>	514	469	560	621	253	418	695
<b>Marine Engineer</b>	588	495	713	600	245	565	614
<b>Mechanical Engineer</b>	395	480	583	563	242	541	613
<b>Operations Manager</b>	502	477	668	606	500	647	591
<b>Project Engineer</b>	481	470	624	617	278	559	581
<b>Project Manager</b>	592	703	676	730	311	802	703
<b>QA/QC Manager</b>	474	465	620	650	312	657	540
<b>Renewable Energy Consultant</b>	322	578	550	513	328	445	646
<b>Solar Engineer</b>	330	339	411	512	230	446	633
<b>Wind Farm Project Manager</b>	347	801	601	782	290	782	640
<b>Wind Turbine Technician</b>	285	410	391	330	203	335	424

## Global mobility

Amidst increasing international decarbonisation, the proportion of companies offering overseas job transfers has risen to 58 per cent from 52 per cent in 2022. The proportion considering relocating has also risen slightly (79 per cent compared to 78 per cent last year).

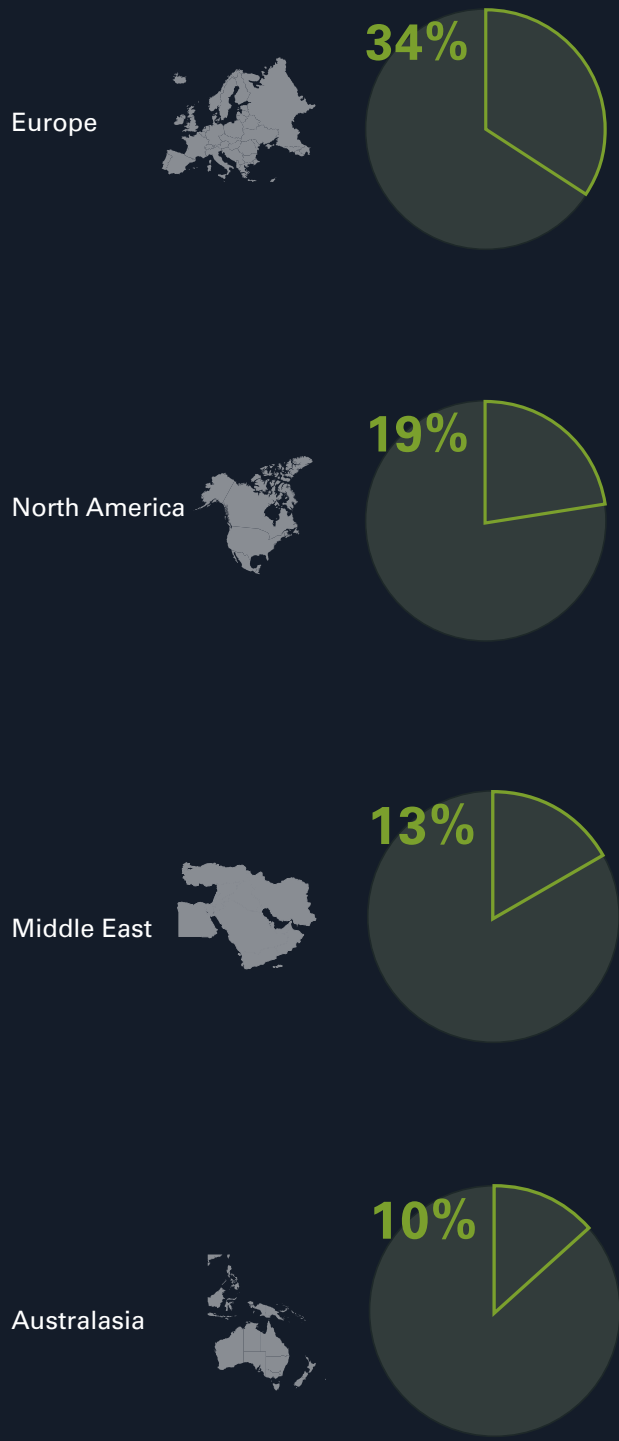
**Europe and North America are the top destinations for relocation due to intensifying transatlantic competition in clean energy.**

With intensifying transatlantic competition on clean energy from the EU Green Deal to the US Inflation Reduction Act, Europe and North America are the top destinations for relocation (34 per cent and 19 per cent, respectively). However, the gap between them has narrowed by five per cent since last year.

Marx says: "The world is increasingly 'levelling up' on clean energy development; with over 90 countries now having net zero targets, there is a wide array of opportunities for international relocations. Rival green policy incentives are creating an increasingly competitive global talent race."

As for reasons for relocation, career progression has fallen slightly (53 per cent vs 58 per cent last year) while lifestyle and low cost of living has risen (11 per cent) amidst rising living costs. Better access to innovative tools and ways of working, such as AI, is third place, as technology becomes an increasing differentiator for employer brands.

### WHERE WOULD BE YOUR PREFERRED LOCATION?



## Attracting and retaining talent

As industry growth intensifies competition for talent, 32 per cent of renewables workers have been headhunted for a job six or more times, and 13 per cent received more than 16 approaches last year. Around a quarter say over half of approaches came from an outside industry or expertise, and only 22 per cent have not been approached.

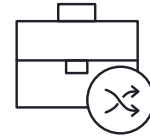
Interest from recruiters is reciprocated, with 88 per cent of renewables workers considering switching jobs fuelled by opportunities for career progress and interest in the wider industry. Thirty-eight per cent would move to another energy sector, with power (43 per cent) overtaking oil and gas (42 per cent) as the sector of choice. Technology has also risen as a top outside industry choice (29 per cent compared to 25 per cent last year).

Adrian Smith, Executive Group Director of Transformation at Worley, says “Growing electric grid interconnections with renewables are creating a parallel intersection of skills between power and renewables. Accelerating renewables digitalisation is also creating overlaps with industries such as technology.”



**88%**

are open to moving roles.



**38%**

are open to moving to another energy sector.



**32%**

have been headhunted for a job six or more times.



**22%**

have not been approached for jobs outside their current industry.

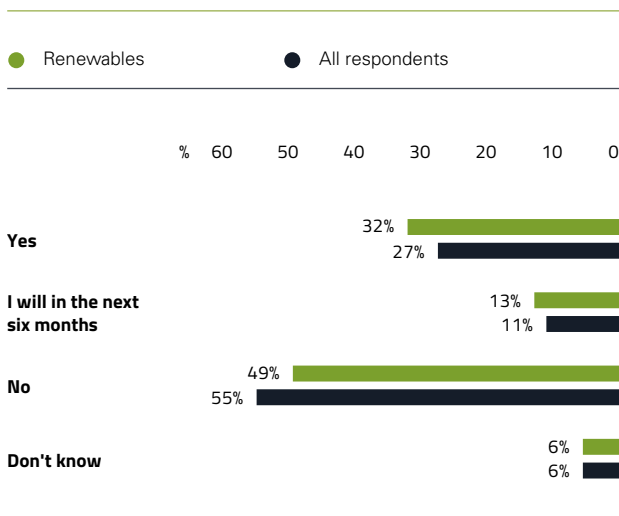




## AI in the workplace


AI is increasingly being introduced across the energy industry, and renewables emerge as the most technologically progressive sector, with the highest proportion of respondents (32 per cent) using AI in their role.

### DO YOU USE AI IN YOUR ROLE? RENEWABLES VERSUS ALL SECTORS




Marx says: “Technologies such as AI are critical to solving renewables challenges from storage to stability of supply with innovations such as data-driven flexible storage and generation. This is reflected in the growing embrace of AI across the sector.”


The proportion of companies with an AI policy (36 per cent) closely matches the proportion using it. However, 28 per cent of those who have a policy have not read it, while 15 per cent of all respondents are unsure if their workplace has one, indicating a need for greater employee awareness.




**32%**  
use AI in their role.



**36%**  
of companies have an AI policy.



**28%**  
of those with an AI policy have not read it.



**36%**  
of AI policies cover what it can be used for.

The main topics covered in AI policies after the benefits and/or objectives of using AI (63 per cent) are maintaining data protection, integrity, and security (54 per cent) and training requirements (44 per cent). Combined with the subsequent finding that top three risks from AI include cyber security and ‘poor training leading to misuse or poor adoption’, this suggests that inadequate training could expose companies to security breaches or misuse.

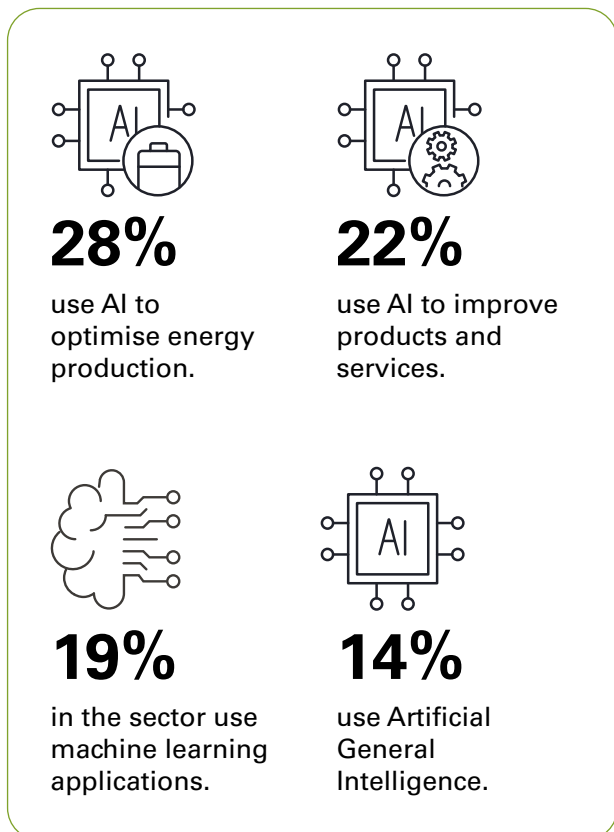
Marx notes: “With AI adoption at an early stage and accelerating rapidly, the industry is still forming policies and procedures. AI policies increasingly exist on paper but must be put into practice through improved employee training.”

## Popular uses of AI

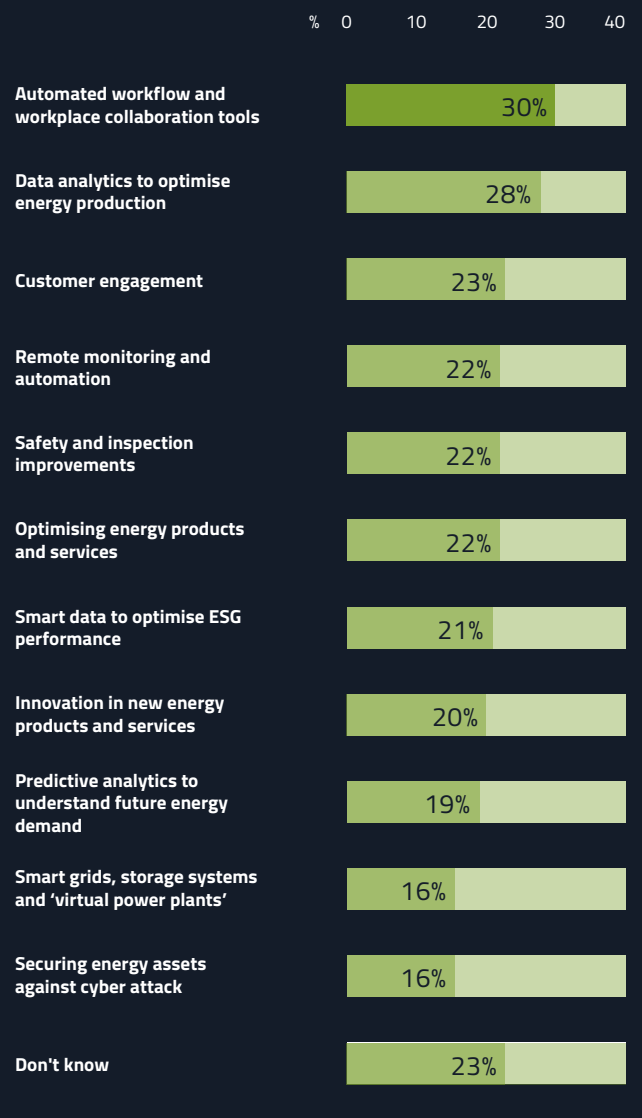
User-friendly generative AI models such as ChatGPT, Bard AI, and Claude (22 per cent), followed by machine learning (19 per cent), are the most used AI applications in the sector. Artificial General Intelligence is also relatively widely used (14 per cent), amidst the increasing adoption of technologies such as Unmanned Autonomous Vehicles for remote inspection.

Automated workflow and collaboration tools are the biggest AI applications for renewables (30 per cent), alongside higher-order tasks such as using AI to optimise energy production (28 per cent) and improve products and services (22 per cent). Just under a quarter of engineers (23 per cent) say their company uses AI to create safety and inspection improvements.

Smith says: "AI has the potential to transform renewable energy processes and production from autonomously selecting the most cost-effective energy mix for electrolysers to data-driven synchronisation of generation and demand."



### WHAT DOES YOUR COMPANY USE AI FOR?



## Enthusiasm for AI

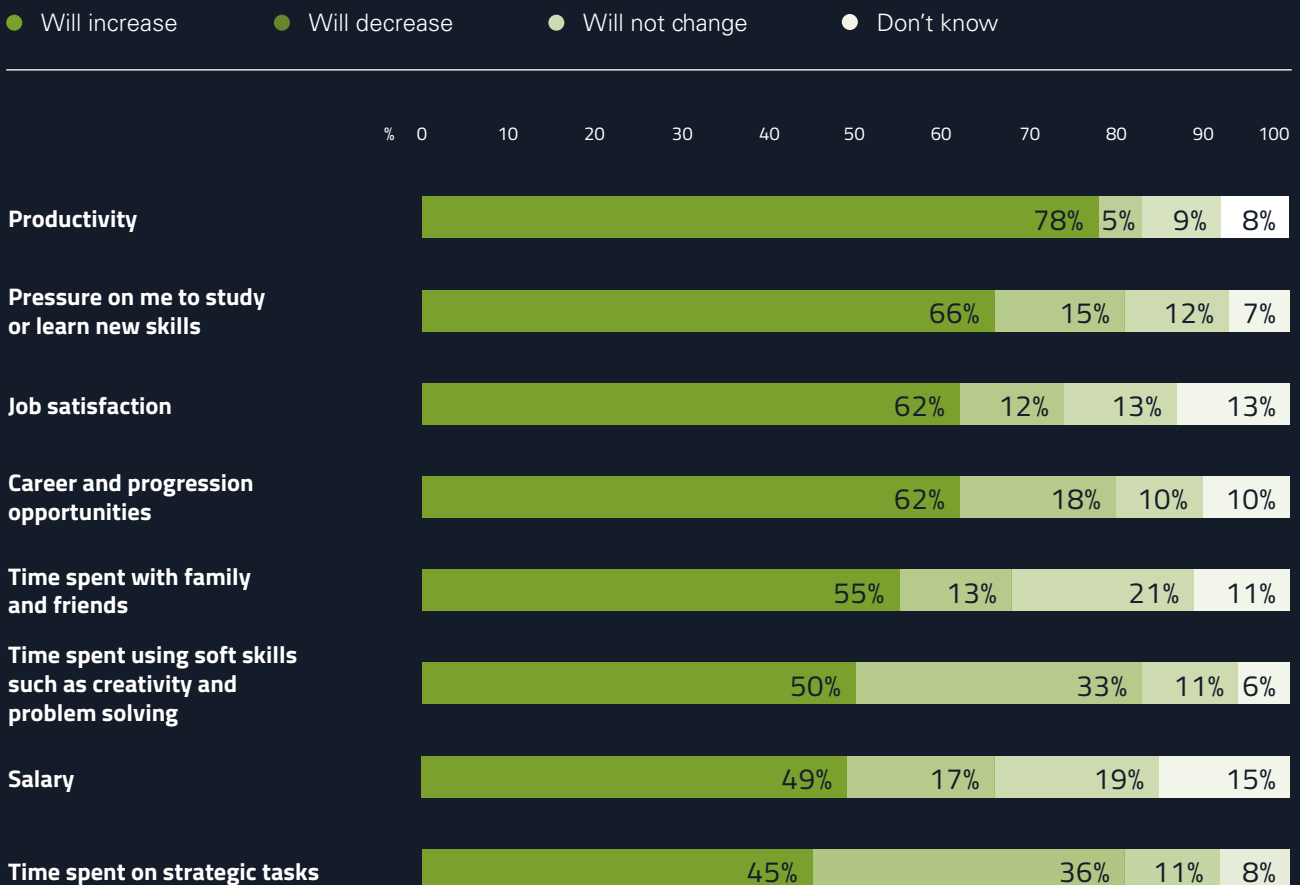
Employees anticipate challenges ahead, especially insufficient investment in AI applications and employee support for AI. The findings indicate that employee resistance to adoption could be overcome through better information, as respondents cite a lack of clarity on which tools offer the best fit for the company among the top three challenges.

Eighty-seven per cent express optimism about the future impact of AI, with 51 per cent very optimistic, 36 per cent fairly optimistic and just three per cent not optimistic. Seventy-eight per cent believe AI will drive an uplift in their personal productivity in the next two years, while 62 per cent believe AI will create new career and progression opportunities and boost job

satisfaction. Perhaps relatedly, 45 per cent believe that AI will increase time spent on strategic tasks or using soft skills such as creativity and problem solving (50 per cent).

Smith says: "AI could turbocharge productivity so that employees head home every day feeling like they've achieved more than before, automating repetitive tasks to free up time for value-adding roles and career development. AI could also bring new roles into renewables and engineering from data scientists to prompt engineers and cause employers to put a higher premium on human skills such as creativity."

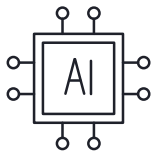
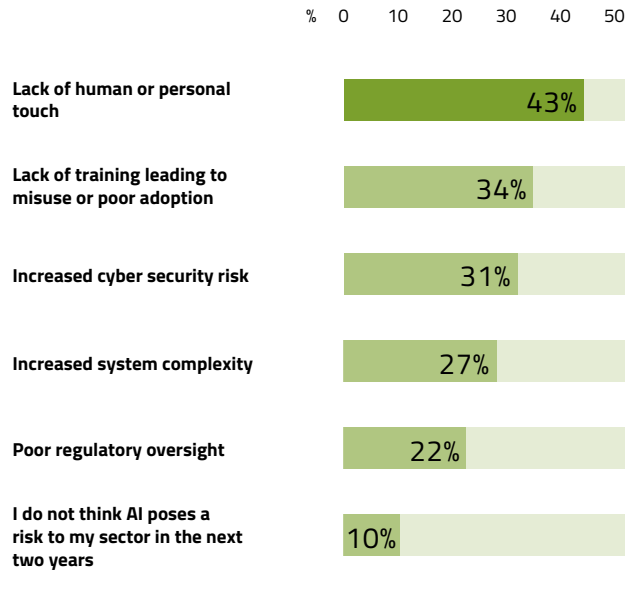
### HOW DO YOU THINK AI WILL IMPACT YOU PERSONALLY IN THE NEXT TWO YEARS?



Among other positive impacts of AI, respondents cite future increases in research and development (33 per cent) and optimisation of productions, services and/or solutions (29 per cent). However, this is clouded by significant concerns around a lack of human or personal touch (43 per cent), insufficient training leading to misuse or poor adoption (34 per cent) and cyber security risks (31 per cent).

Marx says: "AI will create new challenges around data security and ownership as it will involve inputting sensitive corporate data and there are questions over who owns the outputs. Yet this is an opportunity for companies to allay employee fears and reduce risks by harnessing AI's predictive capabilities to boost cyber security while enforcing clear rules around data use."

### WHAT RISKS YOU THINK AI POSES TO YOUR SECTOR IN THE NEXT TWO YEARS?



**87%**

are optimistic about the future impact of AI.



**31%**

say AI will pose an increased cyber security risk.



# AI skills for the future


In contrast to the popular perception of automation replacing human jobs, 96 per cent say AI will increase demand for human skills. Technical skills such as programming/software engineering and IT (both 27 per cent) top the list, followed by machine learning (26 per cent). Twenty-four per cent anticipate demand for cyber security and 23 per cent for robotics skills, yet few workers are being influenced to develop cyber and robotics skills (18 per cent and 16 per cent, respectively), creating potential skills shortages in these areas.

The findings indicate that soft skills will also be increasingly desirable as automation increases the value of uniquely human work. Sought-after soft skills include critical thinking/problem solving skills (21 per cent), leadership and people management, and creativity/innovative thinking/thinking outside the box (both 19 per cent).


As companies race to future-proof their workforces for AI, professionals are also being influenced to develop the most in-demand skills from machine learning (27 per cent) to data science (24 per cent) and IT (23 per cent). Over a quarter of engineers (27 per cent) are considering developing programming / software engineering skills in response to AI.

Marx says “AI creates new risks and therefore openings for jobs tackling challenges from data security to AI policy enforcement. This will involve creating roles responsible for instilling an ‘AI culture’ across the workforce from better data hygiene to ethical AI practices.”

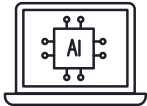
## SKILLS IN DEMAND VERSUS SKILLS RESPONDENTS MAY BE INFLUENCED TO DEVELOP




**8%**  
do not intend to develop any skills because of AI.



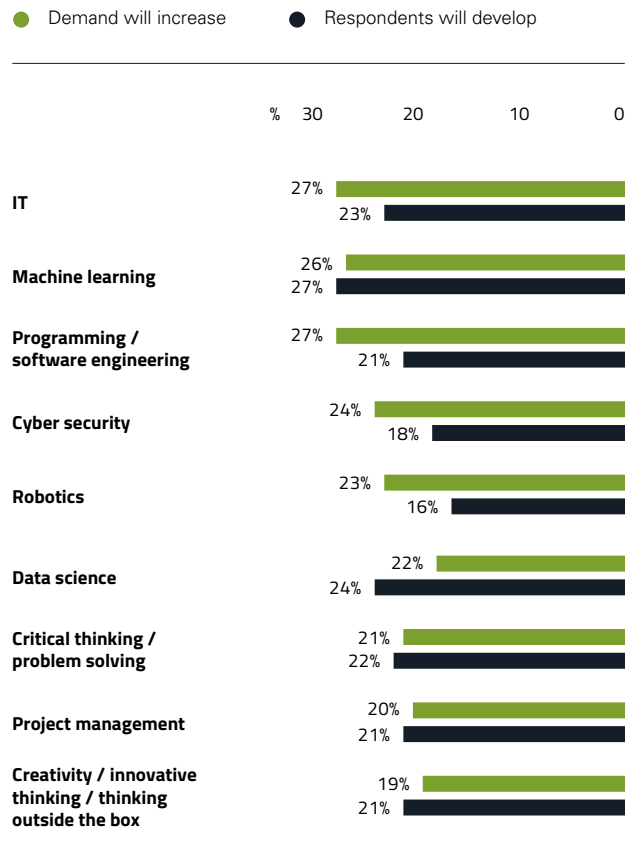
**26%**  
anticipate more demand for machine learning skills.




**#1**  
skill in demand: IT and programming / software engineering.



**#1**  
skill that respondents may develop: machine learning.



A man and a woman, both wearing green safety helmets and high-visibility vests, are crouching on a rooftop solar panel array. They are looking at a tablet held by the woman and pointing at the panels. The background is a bright blue sky with scattered white clouds.

**AI could turbochange productivity, bring new roles into renewables and engineering and create a premium on human skills such as creativity.**

—Adrian Smith

Executive Group Director  
of Transformation at Worley

# Summary

Renewables emerges as the sector with the greatest AI adoption, and it is already transforming everything from businesses processes to energy production and creating new classes of jobs.

However, AI represents a double-edged sword for the sector. It could revolutionise performance yet introduce new risks such as cyber security or accelerate human productivity at the cost of human interactions. Realising the benefits and avoiding the pitfalls will require an approach that ensures human skills and needs are factored into AI adoption at every stage.



# AI and the Future of Skills in Renewable Energy



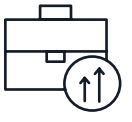
## Personal impact of AI in the next two years:



**78%**  
say productivity will increase.



**62%**  
say job satisfaction will increase.



**62%**  
say career and progression opportunities will increase.

## Top three uses of AI in the renewables sector



Automated workflow and workplace collaboration tools.



Data analytics to optimise energy production.



Customer engagement.

**51%**

of non-hiring professionals report a pay rise this year.

**79%**

are open to relocating for work, with Europe the top choice.

**32%**

of respondents use artificial intelligence in their role.

AI

## Top four skills that are in demand

- 1 Programming / software engineering
- 2 IT
- 3 Machine learning
- 4 Cyber security

## Top four skills that may be developed

- 1 Machine learning
- 2 Data science
- 3 IT
- 4 Critical thinking / problem solving



# Oil and Gas

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Expert  
**Ian Langley**  
Chairman at Airswift

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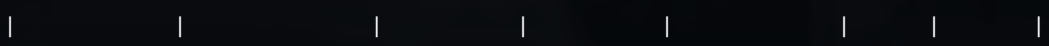
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# Oil and gas

Skills are largely remaining within the oil and gas sector; however, renewables are emerging as an attractive destination for some professionals. Greener energy portfolios could boost talent retention in this evolving energy landscape. Amidst an industry-wide AI revolution, the sector’s older workforce trails behind newer sectors in AI adoption. Boosting employee buy-in will involve harnessing automation to free up time for other priorities and upskilling workers in AI-related fields.

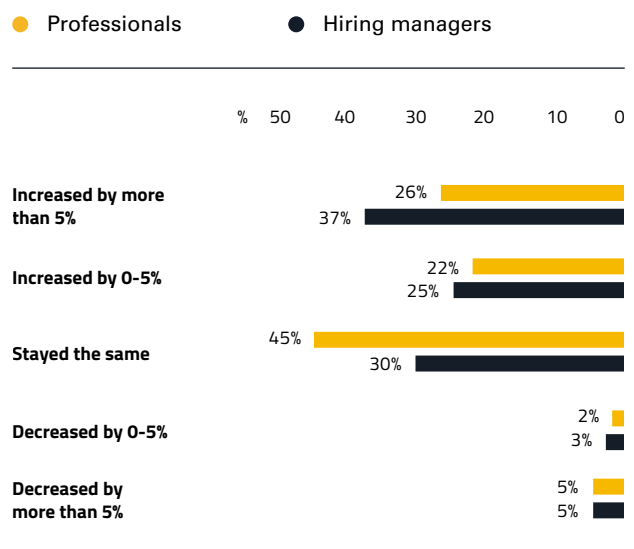
## Salaries

Amidst falling fossil fuel prices, rapid recent salary growth has begun to flatten out. 4 per cent more professionals report a pay rise this year (48 per cent), significantly below the 13 per cent increase in salary rises last year.

Hiring managers have a more positive outlook compared to professionals, with 62 per cent reporting pay increases compared with 54 per cent in 2023. Pay optimism has improved since last year, with 69 per cent of professionals expecting a rise, up from 66 per cent last year. Hiring managers mirror this positive sentiment, with 72 per cent also anticipating pay rises.

Janette Marx, CEO of Airswift, said: “Salary growth is less steep as oil and gas prices fall from last year’s record highs, but pay everywhere is still rising in line with inflation. Previously large swings in salary are being replaced by stable growth based on a solid foundation of long-term projects.”

### PAY CHANGES REPORTED BY WORKERS AND HIRING MANAGERS IN THE LAST 12 MONTHS



**PERMANENT WORKER ANNUAL SALARY, USD (GLOBAL AVERAGE BASED ON SIX YEARS' EXPERIENCE)**

	Africa	Asia	Australasia	Europe	Latin America	Middle East	North America
<b>Accountant</b>	49,773	58,148	92,705	65,054	36,369	44,760	56,644
<b>Administrator</b>	31,337	31,212	75,504	30,897	20,195	31,738	42,196
<b>Chemical Engineer</b>	96,314	59,500	156,289	69,323	38,980	70,001	69,173
<b>Civil Engineer</b>	67,234	67,284	189,619	64,756	32,936	62,926	100,841
<b>Commissioning Engineer</b>	92,440	87,188	183,362	93,136	63,187	84,834	150,726
<b>Construction Engineer</b>	100,675	84,336	143,154	99,987	47,297	66,652	115,285
<b>Construction Manager</b>	101,627	103,320	177,457	88,937	113,715	113,922	106,956
<b>Contracts Manager</b>	61,540	61,392	151,727	85,005	51,027	109,989	67,137
<b>Drilling Engineer</b>	84,492	116,358	224,359	103,787	84,758	114,756	119,768
<b>Drilling Supervisor</b>	124,724	129,917	329,508	146,232	93,002	150,043	192,331
<b>Electrical Engineer</b>	74,981	77,035	128,415	80,895	71,370	63,899	89,969
<b>Finance Manager</b>	67,539	67,345	148,956	79,273	69,325	91,170	90,680
<b>Geophysicist</b>	92,439	97,188	166,431	92,783	51,462	119,112	141,324
<b>HSE Manager</b>	74,967	77,281	199,049	80,997	52,598	90,828	97,419
<b>Inspection Engineer</b>	88,296	63,429	125,988	68,024	67,307	67,782	141,267
<b>Instrumentation Engineer</b>	115,544	71,929	127,153	96,929	59,366	68,089	106,677
<b>Maintenance Engineer</b>	87,867	70,605	120,556	95,948	54,085	71,715	94,505
<b>Mechanical Engineer</b>	71,915	63,068	137,933	85,640	47,781	63,692	87,898
<b>Process Engineer</b>	91,240	69,515	141,313	87,740	51,133	84,637	116,256
<b>Production Engineer</b>	82,641	60,298	160,758	85,029	50,035	81,309	105,063
<b>Project Manager</b>	82,554	97,370	189,482	106,224	64,890	123,623	98,818
<b>QA/QC Inspector</b>	70,674	69,098	132,071	67,703	49,627	50,600	73,642
<b>Reservoir Engineer</b>	91,022	104,684	185,844	110,936	67,292	125,714	150,663
<b>Welding Engineer</b>	65,261	53,811	114,520	97,836	42,819	34,628	76,220

**CONTRACT WORKER DAY RATE, USD (GLOBAL AVERAGE BASED ON SIX YEARS' EXPERIENCE)**

	Africa	Asia	Australasia	Europe	Latin America	Middle East	North America
Accountant	435	359	412	678	160	386	420
Administrator	185	136	408	267	154	204	295
Chemical Engineer	628	466	1,006	782	210	562	640
Civil Engineer	595	481	867	838	200	521	804
Commissioning Engineer	1,085	647	1,080	1,132	412	586	1,109
Construction Engineer	884	502	852	842	260	563	885
Construction Manager	1,129	889	932	953	492	683	764
Contracts Manager	926	644	902	833	390	639	630
Drilling Engineer	1,092	947	1,379	910	520	812	870
Drilling Supervisor	1,555	1,310	2,302	1,313	690	1,113	1,366
Electrical Engineer	815	572	705	803	417	579	705
Finance Manager	681	530	755	871	420	610	680
Geophysicist	1,240	694	1,088	1,166	360	741	973
HSE Manager	892	547	1,348	940	383	641	783
Inspection Engineer	948	470	671	840	408	522	1,138
Instrumentation Engineer	882	576	778	764	380	626	776
Maintenance Engineer	762	641	662	808	337	573	696
Mechanical Engineer	836	491	652	816	310	574	734
Process Engineer	866	599	784	791	300	641	916
Production Engineer	801	458	1,071	828	350	625	631
Project Engineer	794	683	816	724	475	639	725
Project Manager	937	848	842	952	446	904	816
QA/QC Inspector	621	521	778	746	307	585	629
Reservoir Engineer	905	599	1,330	887	436	876	1,074
Welding Engineer	837	436	724	837	272	492	783

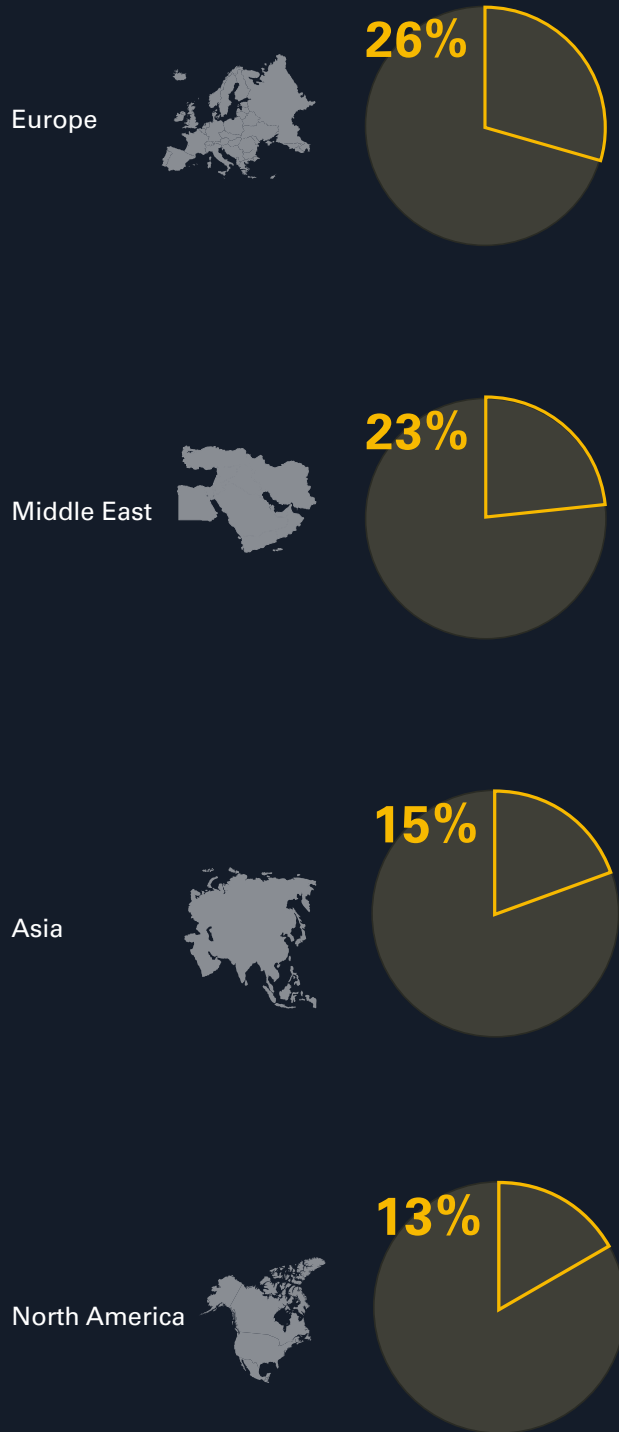
## Global mobility

With an international pipeline of new projects, 83 per cent would consider relocating, compared with 81 per cent in 2023, and 61 per cent of firms now offer overseas transfers, up four per cent from last year. Europe has fallen from 29 to 26 per cent among most desirable destinations, while the Middle East is second on 23 per cent, and North America has fallen out of the top three behind Asia (15 per cent).

**Two fifths of oil and gas workers are expatriates - the highest of all sectors surveyed.**

Career progression (50 per cent) remains the primary driver for foreign transfers, followed by lifestyle, low cost of living, and remuneration (12 per cent and 9 per cent, respectively) as the cost of living continues to increase. Proximity to family remains the most significant barrier for 34 per cent of those resistant to relocation, but 20 per cent say their employer does not offer relocation opportunities, indicating that levels of mobility could be influenced by opportunity.

### WHERE WOULD BE YOUR PREFERRED LOCATION?



## Attracting and retaining talent

87 per cent would consider switching jobs, but most (61 per cent) would stay in oil and gas. Among the 40 per cent that would go elsewhere in the industry, the burgeoning renewables sector is the most popular (50 per cent). This could be linked to ESG being the third biggest driver for career movers. Another 29 per cent would move downstream to petrochemicals.

Job switchers are chiefly motivated by opportunities for career progression and interest in the wider industry. For engineers, flexible ways of working and technology are important factors.

Marx observes: “The findings indicate the battle for oil and gas skills will be fought on home turf with skills mostly circulating within the sector. Yet with an ambitious, mobile, and ESG-conscious workforce increasingly attracted to renewables, employers will need to consider offering promotions and opportunities to lead sustainable innovations.”

Oil and gas skills are in demand from within and beyond the sector, with a slight increase in the number of workers headhunted for another job (81 per cent) and 12 per cent approached over 16 times since last year. Nine percent of engineers have been approached more than 21 times.

A quarter of respondents say that 26 to 50 per cent of all approaches came from an outside industry or expertise, yet this is not being reciprocated with only 19 per cent considering joining another industry. Just 26 per cent of these would move to the technology industry, the second lowest proportion of any sector. The tendency of prospective job-switchers in the industry to prioritise factors other than access to innovative tools, such as AI, points to a technologically traditional workforce.



**87%**

would consider switching jobs.



**40%**

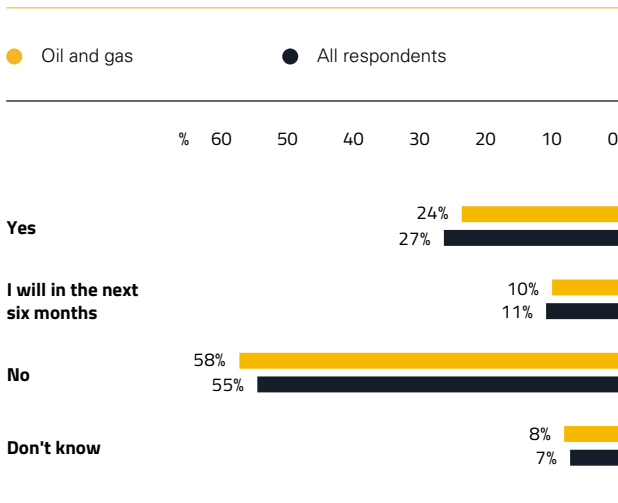
are open to moving energy sector, with renewables the most popular choice.



## AI in the workplace

Similarly, oil and gas is the least advanced sector when it comes to AI adoption. Just 24 per cent use AI in their role, the lowest of all the sectors surveyed. Perhaps relatedly, oil and gas has the lowest proportion of workers under 35.

### DO YOU USE AI IN YOUR ROLE? OIL AND GAS VERSUS ALL SECTORS



A third of employers have an AI policy, yet the sector lags behind others on policy awareness. Nineteen per cent are unsure if their workplace has an AI policy, the highest proportion in the industry. With cyber security and lack of training leading to misuse or poor adoption later cited among top three AI risks, this indicates that inadequate policy awareness could expose oil and gas firms to cyber risks or poor practices.

Current AI policies are seeking to address this with a focus on the benefits and/or objectives of using AI (58 per cent) and maintaining data protection, integrity, and security (52 per cent).

Ian Langley, Chairman of Airswift, says “As a mature sector with significant skills and sunk costs in traditional technologies, AI uptake will be slower than newer, nimbler sectors such as renewables. AI could help power the latest technologies from carbon capture usage and storage to green hydrogen, but these are still nascent and attract a small share of investment.”



**24%**

use AI in their role, the lowest of all the sectors surveyed.



**10%**

will begin using AI in the next six months.



**1/3**

of employers have an AI policy.



**19%**

are unsure whether their workplace has an AI policy, the highest of any sector.



**58%**

of AI policies cover the benefits and/or objectives of using AI.



**41%**

of AI policies include training requirements.




## Popular AI choices

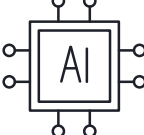
In further evidence of a technologically conservative workforce, individual AI tools are also the least popular among oil and gas workers. Machine learning and/or generative AI, such as ChatGPT, are the most popular at 15 per cent each followed by Artificial General Intelligence (12 per cent), far lower than other sectors.

Langley notes: "With unique hazards such as dangerous chemicals, high pressure/temperature systems etc. oil and gas prioritises safety and worker wellbeing. Given that many areas of oil and gas field development still require human intervention fully automated platforms are rare. In the future AI will play a major part in enabling lower carbon oil and gas production and optimising systems for carbon capture."


As with petrochemicals, the sector primarily uses AI for immediate needs such as safety and inspection (23 per cent) and automated workflow and collaboration (23 per cent each) over strategic forward-thinking applications such as innovating with new products and services.




**15%**  
employ generative AI tools like ChatGPT.



**12%**  
use use Artificial General Intelligence.

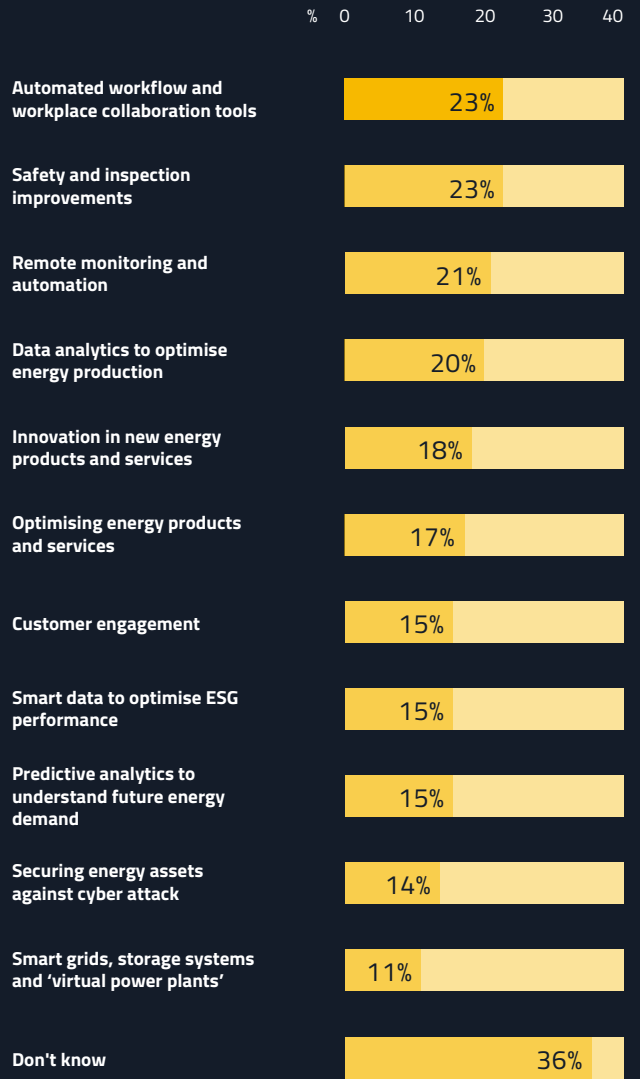


**23%**  
use AI to make safety and inspection improvements.



**23%**  
use AI for automated workflow and collaboration.

### WHAT DOES YOUR COMPANY USE AI FOR?

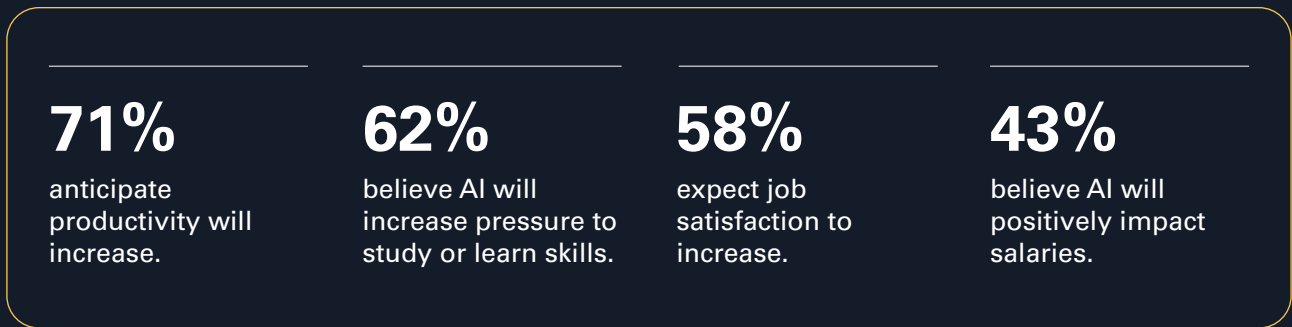


## The future of AI

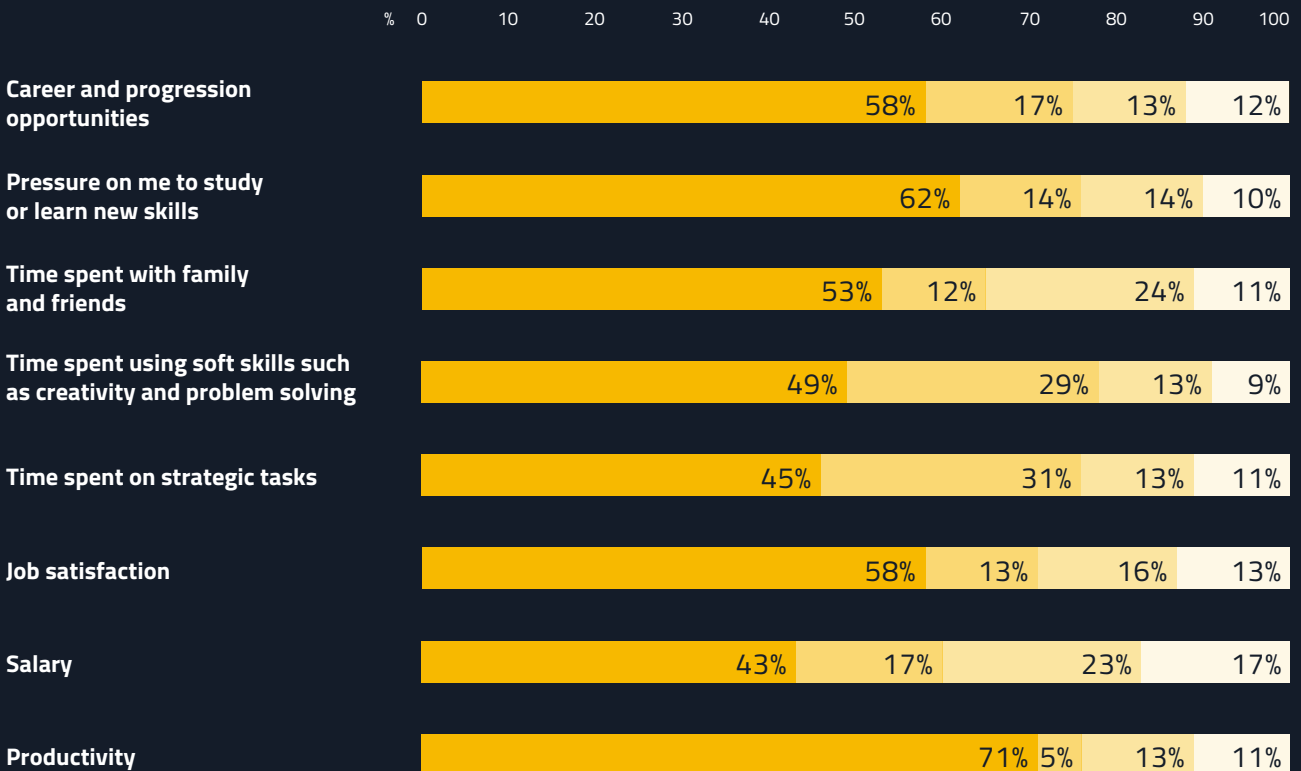
Lack of clarity on which tools best fit the company is the biggest barrier to AI adoption, followed by insufficient investment or employee support. Respondents are among the least positive about the future impact of AI, with 47 per cent very optimistic, the lowest of any, apart from the adjacent petrochemicals sector.

However, 58 per cent believe AI could create career progression opportunities and improve job satisfaction. Around half also believe AI could lead to more time spent on soft skills or with family and friends.

### HOW DO YOU THINK AI WILL IMPACT YOU PERSONALLY IN THE NEXT TWO YEARS?



● Will increase ● Will decrease ● Will not change ● Don't know





Marx observes: “Firms could harness automation to free up time for soft skills and strategic tasks that go towards promotions, boosting positivity about automation. AI also offers an opportunity to improve work/life balance, helping attract more women with families in a sector with just 11 per cent female representation in our survey.”

Conversely, a third (33 per cent) say AI could either hurt career progress or negatively impact salaries. Sixty-two per cent believe it will increase pressure on them to learn new skills and with the sector also having the oldest workforce, this could partly explain insufficient employee support for automation.

Professionals believe AI could have a series of positive impacts on the sector over the next two years from boosting research and development (28 per cent) to optimising production, services and/or solutions (27 per cent).

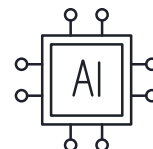
Yet this is significantly outweighed by concerns over risks AI could pose. Forty per cent fear a lack of human or personal touch, 32 per cent worry about inadequate training leading to misuse or poor adoption and 28 per cent cite increased cyber security risks.

Ken Corriveau, Chief Information Officer, Omnicom Media Group says: “This is an opportunity to allay fears and upskill workers for new roles by democratising digital skills to augment rather than replace humans. For example, previously you needed engineers who understood coding, now you can tell open-source AI what you want, and it will code snippets for you to put together. This will democratise AI innovation and require both soft and technical skills.”



**27%**

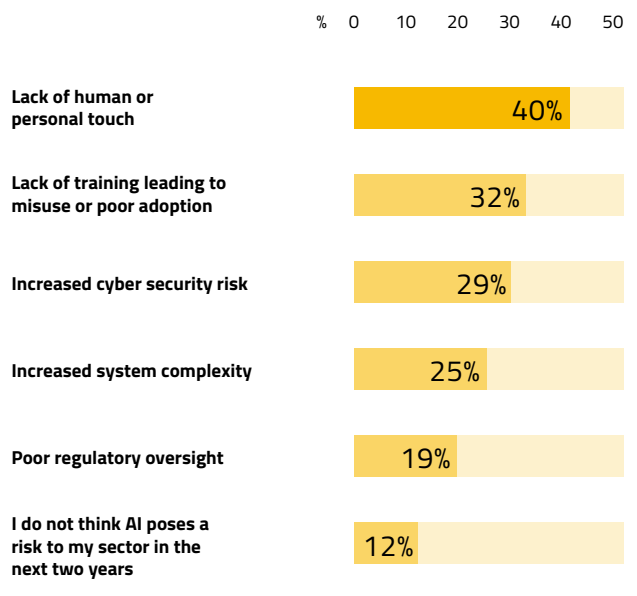
think AI could optimise production, services, and/or solutions.



**32%**

are concerned inadequate training could lead to misuse or poor adoption of AI.

#### WHAT RISKS DO YOU THINK AI POSES TO YOUR SECTOR IN THE NEXT TWO YEARS?



## AI skills for the future


Ninety-four per cent expect AI to increase demand for skills with the most sought-after skills corresponding to some of the biggest anticipated risks. Cyber security is joint third most in-demand along with data science (24 per cent). Programming/software engineering and IT (27 and 26 per cent, respectively) are projected to come top of employers' wish lists.

Yet training priorities appear misaligned with skills needs. IT and cyber security rank low among skills that professionals are most interested in developing (eighth and ninth, respectively) despite being in the top three most in-demand. This indicates that firms may face skills shortages in these areas.


Machine learning is the top priority for upskilling followed by data science, programming and software engineering, and data visualisation skills. In line with the earlier finding that AI could free up more time for soft skills, employees are also interested in developing skills such as creative/innovative thinking and critical thinking/problems solving (both 21 per cent).

Langley observes: "Increasing adoption will create 'AI skills gaps' in areas from prompt engineering to robotics maintenance, forging new job opportunities. Marrying training with in-demand skills will help bridge the gap between human and machine, reducing the risks from adoption and ensuring AI compliments rather than conflicts with human skills."

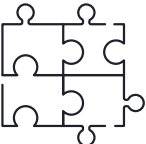
### SKILLS IN DEMAND VERSUS SKILLS RESPONDENTS MAY BE INFLUENCED TO DEVELOP




**#1**  
skill in demand:  
programming / software engineering.



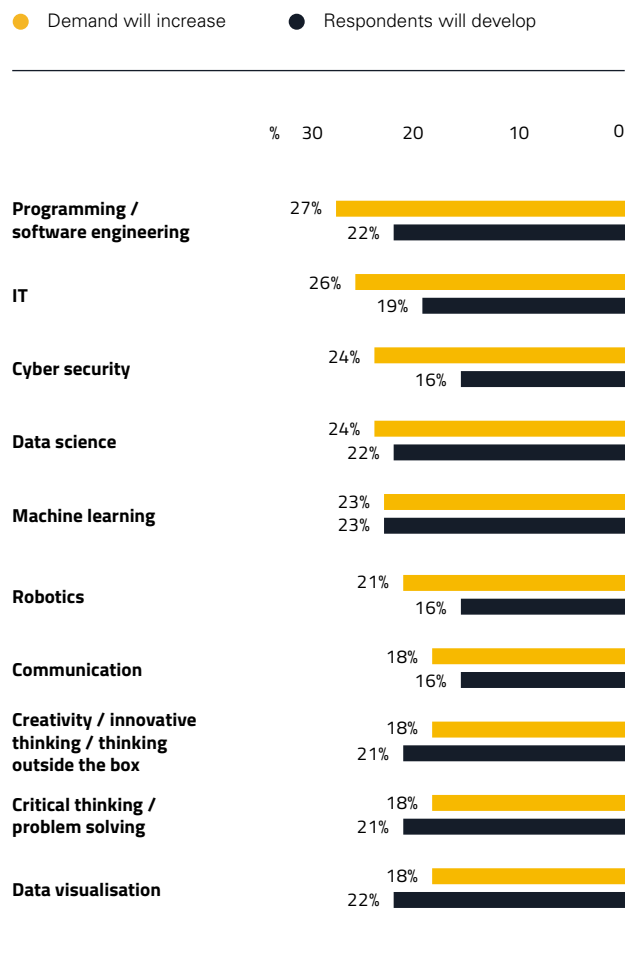
**#1**  
skill that respondents may develop: machine learning.




**21%**  
may develop creative/innovative thinking skills.



**7%**  
gap between IT skills in demand and development.





**As a mature sector with significant skills and sunk costs in traditional technologies, AI uptake will be slower than newer, nimbler sectors such as renewables. AI could help power the latest technologies from carbon capture usage and storage to green hydrogen, but these are still nascent and attract a small share of investment.**

**– Ian Langley**  
Chairman of Airswift

# Summary

Oil and gas emerges as the sector with the lowest rates of AI adoption, stymied by a lack of employee support and financial backing due to ingrained skills and investments in older technology.

Although workers voice their concerns, many see the upsides of automation in freeing time for families, increasing career opportunities, and boosting innovation and production. Successful AI transformation must march in step with skills development and smart recruitment to attain the full benefits and broadest workforce support.



# AI and the Future of Skills in Oil and Gas



## Personal impact of AI in the next two years:



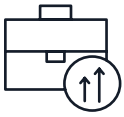
**71%**

say productivity will increase.



**58%**

say job satisfaction will increase.



**58%**

say career and progression opportunities will increase.

## Top three uses of AI in the oil and gas sector



Automated workflow and workplace collaboration tools.



Safety and inspection improvements.



Remote monitoring and automation.

**48%**

of non-hiring professionals report a pay rise this year.

**83%**

are open to relocating for work, with Europe the top choice.

**24%**

of respondents use artificial intelligence in their role.

AI

## Top four skills that are in demand

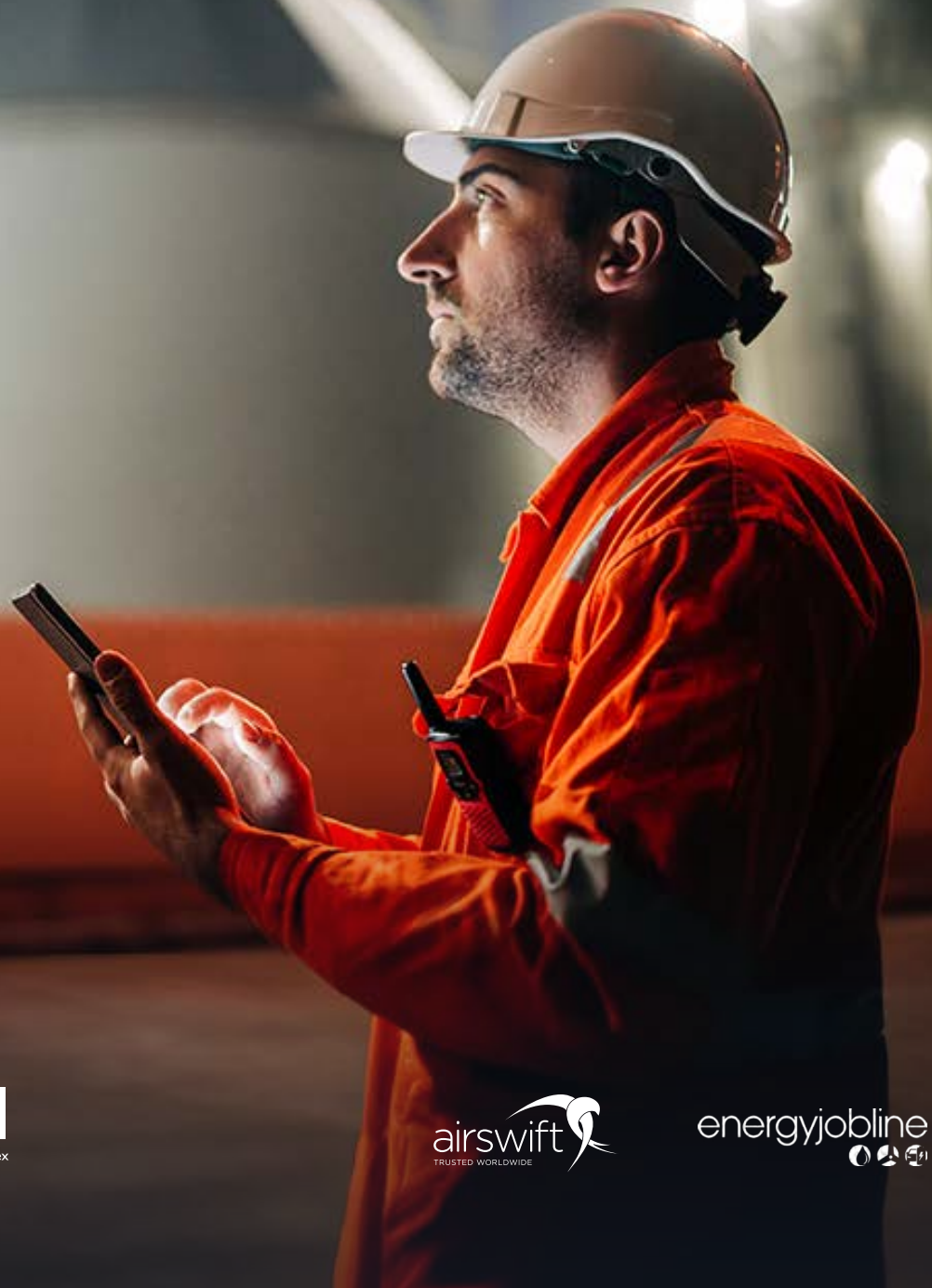
- 1 Programming / software engineering
- 2 IT
- 3 Cyber security
- 4 Data science

## Top four skills that may be developed

- 1 Machine learning
- 2 Programming / software engineering
- 3 Data visualisation
- 4 Data science

# Petrochemicals

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Global Energy Talent Index



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# Contents



**Expert**  
**Sharon Barclay**  
Chief Human Resources Officer,  
Monument Chemical

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# Petrochemicals

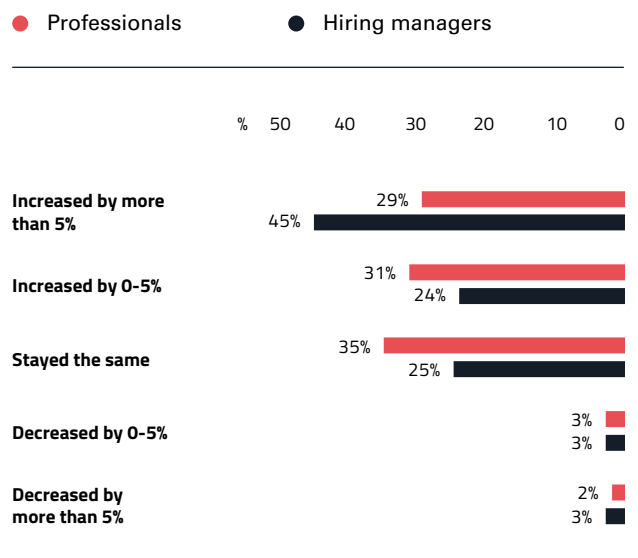
The petrochemicals sector appears to be in a buoyant mood: salary progression is solid, and professionals are optimistic about adopting AI technology – both in terms of impact on the sector and their own careers. However, there are signs that may call for a more careful consideration of future skill requirements.

## Salaries

A tight labour market has seen petrochemicals salary sentiment soar to pre-pandemic levels. Sixty per cent of professionals report an increase in the last year, compared to 50 per cent the year before and 55 per cent before Covid-19.

Hiring managers report even higher numbers: 69 per cent say pay has increased in the sector, compared to 65 per cent last year. Big rises also seem more common, with 45 per cent putting that increase above five per cent – just 35 per cent said so last year. Both hiring managers and professionals expect even greater movement next year, with 80 per cent and 75 per cent expecting rises, respectively.

### PAY CHANGES REPORTED BY WORKERS AND HIRING MANAGERS IN THE LAST 12 MONTHS



## PERMANENT WORKER ANNUAL SALARY, USD (GLOBAL AVERAGE BASED ON SIX YEARS' EXPERIENCE)

	Africa	Asia	Australasia	Europe	Latin America	Middle East	North America
Administrator	98,804	49,961	118,195	64,517	31,833	70,947	90,084
Chemical Engineer	85,142	59,166	94,005	67,353	36,648	64,285	130,000
Chemist	66,494	64,117	81,879	58,618	40,950	66,764	90,000
Construction Manager	87,552	55,611	110,140	82,305	60,474	82,692	145,000
Electrical Engineer	71,230	70,212	100,949	88,369	53,580	76,838	180,000
Environmental Manager	74,004	69,166	84,871	87,877	49,260	67,953	169,142
Finance Manager	95,366	72,934	87,743	77,313	56,012	70,886	135,912
Health and Safety Manager	62,651	71,329	65,884	76,594	39,885	64,836	126,277
HR Manager	57,892	49,641	72,711	54,118	41,304	62,141	120,000
Lab Manager	37,101	52,221	98,668	43,230	38,206	58,226	90,000
Maintenance Technician	38,984	48,437	68,652	46,819	23,881	47,711	51,896
Mechanical Engineer	65,459	65,930	98,795	70,099	54,636	70,265	83,700
Office Manager	49,629	39,468	56,539	40,075	27,757	36,947	70,422
Planner/Scheduler	77,113	54,835	86,119	59,068	37,870	59,343	90,818
Process Engineer	101,991	62,422	112,686	88,875	34,151	92,896	104,630
Process Operations Production Manager	70,072	57,195	88,067	62,491	38,587	71,974	106,285
Project Coordinator	85,219	66,678	83,113	63,853	41,942	52,134	76,713
Purchasing Manager	78,869	71,890	82,467	71,885	39,651	72,371	55,803
QA/QC Manager	62,573	68,758	88,874	80,675	35,993	65,395	98,112
Technical Engineer	17,946	36,881	55,254	36,846	20,483	20,533	40,960

**CONTRACT WORKER DAY RATE, USD (GLOBAL AVERAGE BASED ON SIX YEARS' EXPERIENCE)**

	Africa	Asia	Australasia	Europe	Latin America	Middle East	North America
<b>Administrator</b>	694	354	620	648	228	682	721
<b>Chemical Engineer</b>	645	413	675	782	252	577	625
<b>Chemist</b>	509	402	543	596	280	392	482
<b>Construction Manager</b>	1,102	462	792	1,024	472	644	726
<b>Electrical Engineer</b>	858	481	724	802	396	646	769
<b>Environmental Manager</b>	955	426	611	589	457	557	808
<b>Finance Manager</b>	687	462	632	748	394	608	743
<b>Health and Safety Manager</b>	1,061	423	472	641	397	458	689
<b>HR Manager</b>	375	403	452	679	381	516	600
<b>Lab Manager</b>	465	296	432	456	300	299	704
<b>Maintenance Technician</b>	402	346	416	489	172	382	357
<b>Mechanical Engineer</b>	848	387	636	913	398	545	664
<b>Office Manager</b>	358	282	374	407	200	273	554
<b>Planner/Scheduler</b>	523	392	621	649	311	480	674
<b>Process Engineer</b>	704	434	811	636	242	870	856
<b>Process Operations Production Manager</b>	1,295	393	548	614	277	416	706
<b>Project Coordinator</b>	675	449	529	622	312	393	553
<b>Purchasing Manager</b>	563	514	557	710	282	551	553
<b>QA/QC Manager</b>	736	502	640	1,131	254	498	701
<b>Technical Engineer</b>	195	138	233	316	140	165	290

## Global mobility

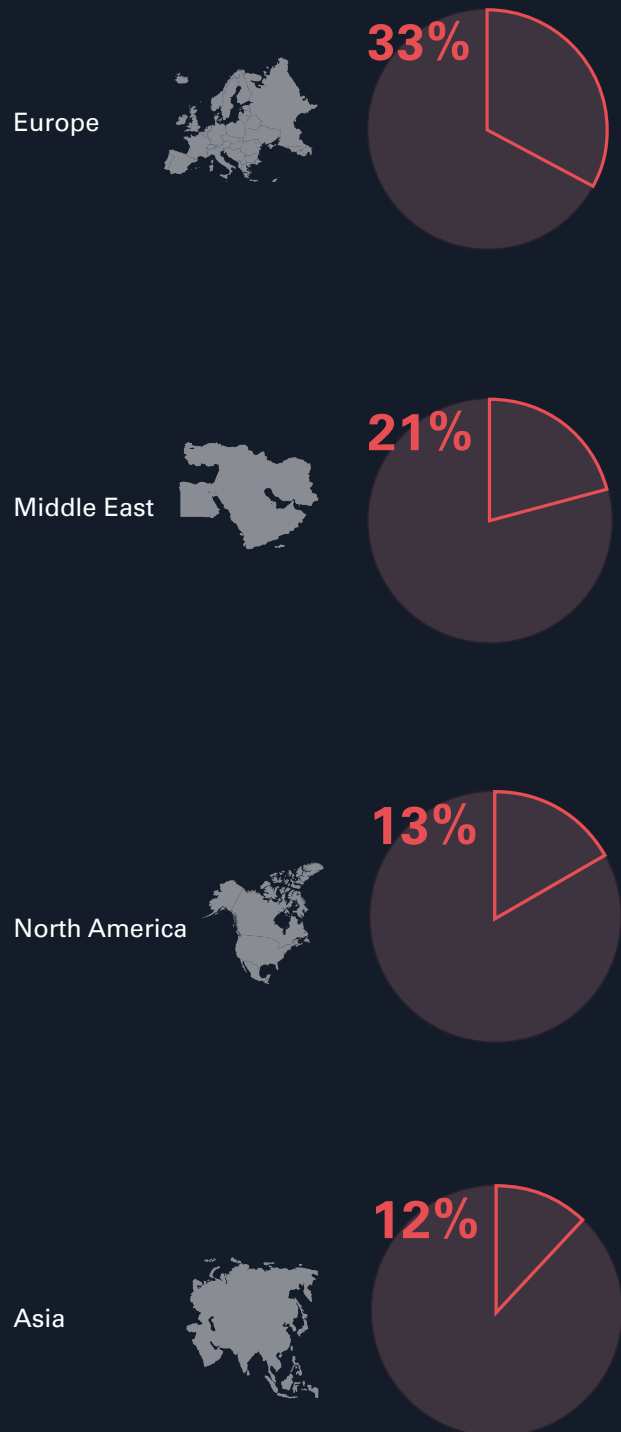
The petrochemicals workforce remains a globally mobile one: 81 per cent of professionals would consider relocating – almost identical to last year’s 83 per cent – and over a third of respondents are expatriates.

Career progression remains the primary driver for making a move (47 per cent), with lifestyle and low cost of living a distant second (13 per cent). The most popular destinations remain Europe (33 per cent), the Middle East (21 per cent) and North America (13 per cent).

**Career progression remains the primary driver for making a move, with lifestyle and low cost of living a distant second.**

For those reluctant to relocate, 43 per cent say proximity to family is the main barrier. A further 12 per cent point to concern over their children’s education. Combined with apparently high satisfaction with salary progression, it seems some in the petrochemicals workforce are relatively settled for the time being.

### WHERE WOULD BE YOUR PREFERRED LOCATION?



## Attracting and retaining talent

A large majority (87 per cent) of respondents are open to moving roles. Though a move within the sector is the most attractive (57 per cent), a significant percentage are open to moving to another energy sector (45 per cent), or to another industry entirely (23 per cent).

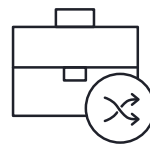
The adjacent oil and gas sector is the most popular destination as in previous years: 52 per cent would consider this move, and 29 per cent of oil and gas professionals would consider a move to petrochemicals, demonstrating the connectedness of the sectors. However, 38 per cent of respondents say they would consider a move into renewables this year – a five per cent jump on last year, and interest in renewables is even higher among engineers (43 per cent). Power is a very distant third (seven per cent).

Sharon Barclay, Chief Human Resources Officer at Monument Chemical, comments: “There is growing concern for sustainability in the chemical industry, as in all sectors, so it’s no surprise to see interest in renewables increasing. However, I think it reflects that, as an industry, we need to communicate our sustainability story better. There are huge opportunities to drive sustainability in chemicals, whether you’re looking at sustainable aviation fuels or new ways to create products from waste streams. It’s exciting, and we need to emphasise that.”

As in previous years, career progression remains the primary motivator for switching (33 per cent). Interest in the wider industry (16 per cent), remuneration and benefits (11 per cent), and ESG (seven per cent) are notable factors, but trail by a large margin.

Petrochemical professionals are also in high demand: 82 per cent have been approached for another role in the past year, and 11 per cent have been contacted more than 20 times. Engineers are in particularly high demand, with 86 per cent having been approached.

Janette Marx, CEO of Airswift, warns: “This is a tricky situation for hiring managers: people report high openness to moving not just within the sector, but also beyond it. Yet, they’re also relatively happy with how salaries are going, so retention isn’t as simple as offering more money. Above all, professionals in the petrochemical space need to see a viable and attractive path for progression.”



**45%**

are open to moving to another energy sector.



**23%**

would consider moving to a different industry entirely.



**52%**

would consider moving from petrochemicals to oil and gas.



**33%**

cite career progression as the primary motivator for switching jobs.

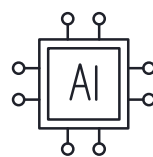
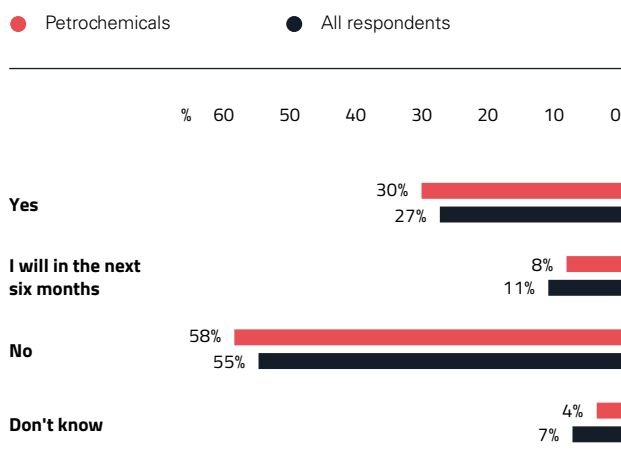


## AI in the workplace

Despite its affinity with the oil and gas sector, petrochemicals is closer to renewables when it comes to the apparent adoption of AI. Though most (58 per cent) do not currently use AI in their role, 30 per cent already do, and a further eight per cent expect to do so within six months.

With a rapid uptake expected within the next six months, it is encouraging that a third of respondents report that their workplace already has an AI policy (though seven per cent are yet to read it). Thirteen per cent are unsure whether such a document exists. Where policies are in place, these tend to focus on explaining the benefits and/or objectives of using AI (reported by 59 per cent) and maintenance of data protection, integrity, and security (53 per cent).

### DO YOU USE AI IN YOUR ROLE? PETROCHEMICALS VERSUS ALL SECTORS



**27%**  
use AI in their role.




**59%**  
of AI policies explain AI's benefits and objectives.

## Popular AI choices


There are no clear winners in terms of which AI tools petrochemicals professionals are turning to. The most popular are machine learning (used by 17 per cent), generative AI such as ChatGPT (also 17 per cent), robotic process automation (16 per cent) and artificial general intelligence (14 per cent).

The top use cases for these tools are automated workflow and collaboration (25 per cent), and safety and inspection improvements (24 per cent) – the same top pair as in oil and gas (both 23 per cent).

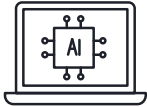
Marx notes, “Both petrochemicals and oil and gas are hazardous industries, and it’s good to see that for professionals in these sectors, one of the first impulses is to explore how new technologies can help keep people safe.”




**17%**  
use machine learning.



**24%**  
use AI to make safety and inspection improvements.

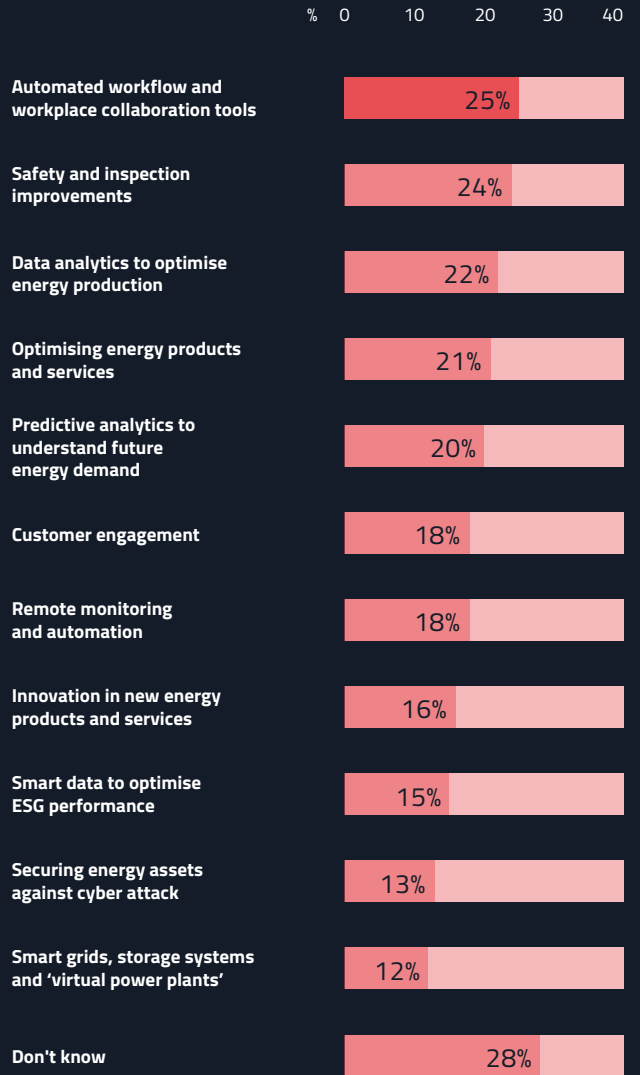


**17%**  
employ generative AI tools like ChatGPT.



**16%**  
use robotic process automation.

### WHAT DOES YOUR COMPANY USE AI FOR?





## The future of AI

A lack of soft skills, such as leadership and communication, is the number one challenge to making greater use of AI, followed by insufficient investment in AI applications. Lack of clarity over which tools best fit the company is third – in contrast to oil and gas and power, where this uncertainty is the top barrier.

Petrochemicals is also among the most optimistic about AI’s future impact, with 51 per cent being ‘very optimistic’, behind only the power sector (53 per cent).

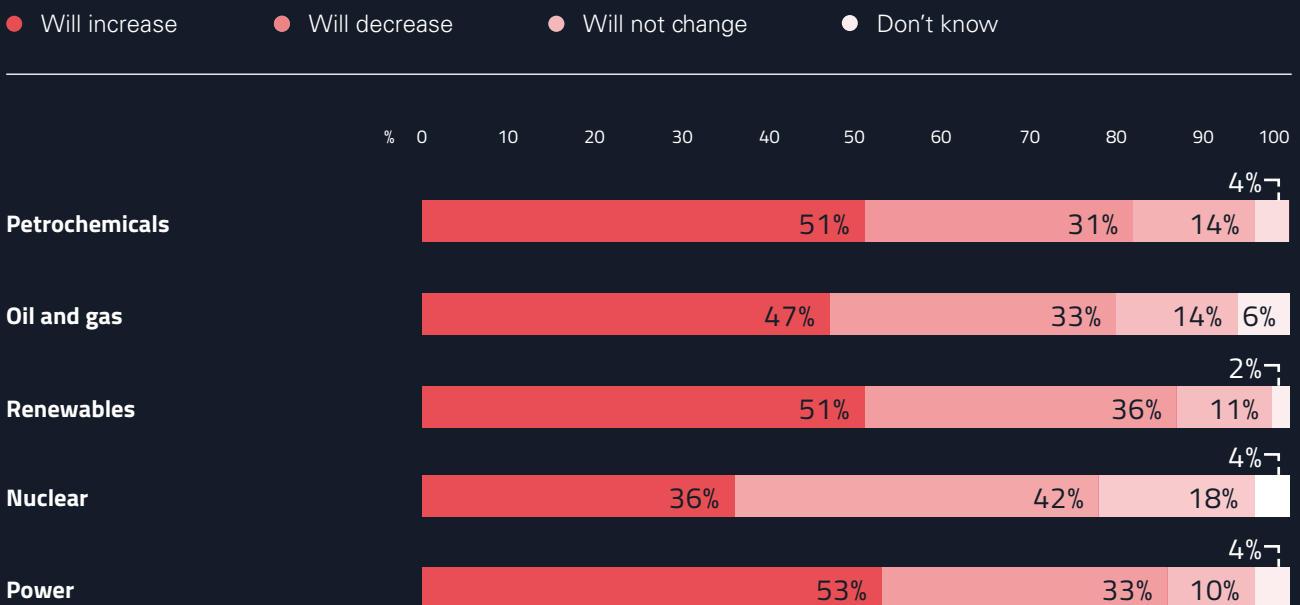
Marx continues: “Consider these things in combination. Petrochemical professionals are optimistic about the impact of AI and are laser-focused on safety. They also wisely identify leadership and investment as the key barriers to uptake. Together, these factors suggest that the petrochemicals sector is doing a good job of approaching AI strategically.”

Nearly a third (32 per cent) of respondents say that AI will help the sector optimise products, services and/or solutions. A quarter say it will boost research, development, and innovation (25 per cent) and reduce labour costs (24 per cent). Similar numbers expect improved predictive analytics and forecasting (23 per cent), reduced production or operating costs (22 per cent), and increased creativity and critical thinking (21 per cent).

Respondents are similarly optimistic about how AI might impact them personally in the next two years: 73 per cent expect a boost in productivity, 58 per cent look forward to increased job satisfaction, and 57 per cent anticipate both better career progression and more time with family and friends.

That being said, professionals also recognise the risks that AI may pose. In the next two years, 41 per cent are concerned over a lack of human or personal touch, 35 per cent worry that lack of training could lead to misuse or poor adoption and 26 per cent are concerned about cyber security. Only 13 per cent were confident there would be no concerns at all.

### HOW OPTIMISTIC ARE YOU ABOUT THE FUTURE IMPACT OF AI ON YOUR SECTOR?



## AI skills for the future


However, professionals do not expect to simply sit back and benefit from the promise of AI. Most (63 per cent) believe it will also increase pressure on them to study or learn new skills.

When asked which skills would be in greater demand due to the increasing use of AI, respondents point to technical skills such as programming/software engineering, data science, cyber security and machine learning. Far fewer look to soft skills such as critical thinking and problem solving, creativity and innovative thinking, and leadership and communication skills.


Professionals are interested in developing skills that broadly match what they believe will be needed, with engineers particularly interested in developing data visualisation skills.

Barclay observes: “It’s jarring that lack of leadership and communication is said to be the top challenge for greater AI adoption today; yet, they rank so lowly in professionals’ estimation of which skills will be in greater demand and which they personally expect to develop. This raises the question of the discrepancy between the two. What are we to make of that? Perhaps some believe that today’s leadership is sufficient and just needs more time, or possibly ambitious professionals might conclude that there are greater opportunities in these soft skills than they initially thought.”


### SKILLS IN DEMAND VERSUS SKILLS RESPONDENTS MAY BE INFLUENCED TO DEVELOP



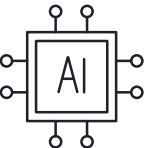
**9%**  
gap between programming skills in demand and development.



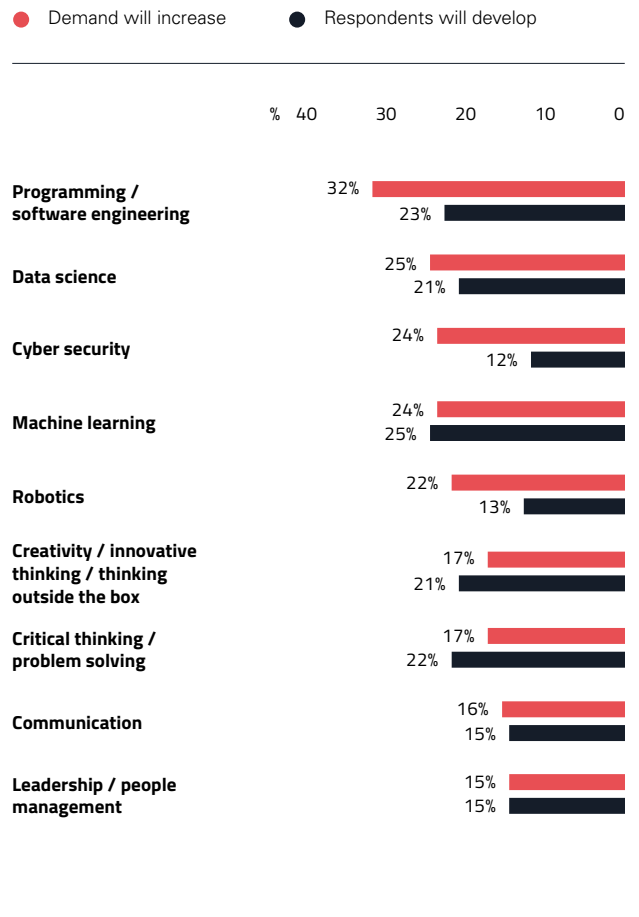
**12%**  
gap between cyber security skills in demand and development.



**#1**  
skill in demand: programming / software engineering.



**#1**  
skill that respondents may develop: machine learning.



A photograph of a worker in a white hard hat and orange safety vest, viewed from the side, looking at a laptop. The scene is set at night with industrial structures and lights in the background.

**Petrochemical  
professionals are  
optimistic about the  
impact of AI ... and  
are doing a good  
job of approaching  
AI strategically.**

—Janette Marx  
CEO, Airswift

# Summary

Petrochemicals appears to be a relatively optimistic and enthusiastic early-adopter of AI, especially compared to its close-cousin, the oil and gas sector. However, an apparent mismatch between today's barriers to adoption and tomorrow's prized skills suggests a need for careful leadership to reap these technological benefits.



# AI and the Future of Skills in Petrochemicals



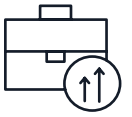
## Personal impact of AI in the next two years:



**74%**  
say productivity will increase.



**58%**  
say job satisfaction will increase.



**57%**  
say career and progression opportunities will increase.

## Top three uses of AI in the petrochemicals sector



Automated workflow and workplace collaboration tools.



Safety and inspection improvements.



Data analytics to optimise energy production.

**60%**

of non-hiring professionals report a pay rise this year.

**81%**

are open to relocating for work, with Europe the top choice.

**30%**

of respondents use artificial intelligence in their role .

AI

## Top four skills that are in demand

- 1 Programming / software engineering
- 2 Data science
- 3 Cyber security
- 4 Machine learning

## Top four skills that may be developed

- 1 Machine learning
- 2 Programming / software engineering
- 3 Data visualisation
- 4 Critical thinking / problem solving

# Power

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**Expert**  
**Wenche Kjøllås**  
Independent Director

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# Power

Steady salary growth is not enough to satisfy a power sector hungry for career progression. However, the key to attracting and retaining talent may lie in greater adoption of AI and investment in upskilling, with those in the power sector particularly optimistic about new technologies' potential benefit for both their own careers and the sector.

## Salaries

Year-on-year, the power sector appears to benefit from relative stability, with a slim majority (54 per cent) of professionals reporting an increase in income, up from 50 per cent last year, and rising above pre-pandemic levels (48 per cent in 2020). Hiring managers follow a similar trend, albeit at higher levels, with 67 per cent reporting increased pay in the sector, up from 59 per cent last year.

This stability is expected to continue to pay dividends, with 77 per cent of professionals anticipating an increase in income in the year to come, and 76 per cent of hiring managers in agreement. Only three per cent of each group expect falls.

### PAY CHANGE EXPECTATIONS FOR NEXT YEAR REPORTED BY WORKERS AND HIRING MANAGERS





## PERMANENT WORKER ANNUAL SALARY, USD (GLOBAL AVERAGE BASED ON SIX YEARS' EXPERIENCE)

	Africa	Asia	Australasia	Europe	Latin America	Middle East	North America
<b>Business Development Manager</b>	74,928	96,652	227,988	80,590	45,669	84,636	69,754
<b>CAD Technician/Operator</b>	31,118	40,199	44,042	54,440	14,347	41,122	49,263
<b>Chemical Engineer</b>	61,816	63,097	73,203	76,745	29,657	65,222	70,335
<b>Civil Engineer</b>	53,854	62,337	117,847	63,129	32,007	66,631	80,485
<b>Commercial Manager</b>	91,162	73,781	185,169	91,504	39,655	93,224	112,915
<b>Commissioning Engineer</b>	66,811	78,789	114,311	82,999	36,147	62,149	101,433
<b>Construction Manager</b>	77,270	100,404	188,226	100,742	47,723	77,075	84,453
<b>Control Room Operator</b>	44,488	43,849	76,043	54,066	25,422	47,287	65,975
<b>Design Engineer</b>	59,942	52,589	104,504	79,507	21,857	61,393	62,778
<b>Electrical Engineer</b>	68,684	83,791	127,986	94,313	29,713	69,434	81,379
<b>HSE Manager</b>	67,435	65,340	167,523	90,885	43,949	66,211	117,551
<b>Inspection Engineer</b>	66,967	64,839	108,509	60,287	32,884	61,399	83,493
<b>Instrumentation Engineer</b>	70,869	67,626	125,870	78,053	34,551	66,613	95,056
<b>Maintenance Engineer</b>	67,435	68,077	102,964	62,664	37,137	65,917	85,884
<b>Mechanical Engineer</b>	61,100	67,284	100,261	61,632	36,078	70,209	93,731
<b>Plant Manager</b>	65,562	72,966	118,071	81,148	42,624	69,776	83,268
<b>Project Engineer</b>	69,933	67,256	152,437	70,441	48,039	78,150	95,613
<b>Project Manager</b>	67,591	69,818	117,428	72,322	24,525	69,672	80,362
<b>QA/QC Inspector</b>	54,318	67,445	102,568	58,024	28,423	66,749	109,197
<b>Quantity Surveyor</b>	52,294	60,961	125,930	53,462	38,450	65,369	106,868

**CONTRACT WORKER DAY RATE, USD (GLOBAL AVERAGE BASED ON SIX YEARS' EXPERIENCE)**

	Africa	Asia	Australasia	Europe	Latin America	Middle East	North America
<b>Business Development Manager</b>	483	498	626	517	180	505	574
<b>CAD Technician/Operator</b>	232	256	312	384	102	279	352
<b>Chemical Engineer</b>	442	451	496	483	214	482	502
<b>Civil Engineer</b>	349	447	563	451	229	570	600
<b>Commercial Manager</b>	651	538	645	671	290	653	806
<b>Commissioning Engineer</b>	477	559	757	607	261	524	725
<b>Construction Manager</b>	552	717	659	692	339	633	568
<b>Control Room Operator</b>	295	319	427	377	180	328	471
<b>Design Engineer</b>	428	400	539	486	151	460	459
<b>Electrical Engineer</b>	491	493	591	668	210	549	581
<b>HSE Manager</b>	482	467	634	582	329	564	905
<b>Inspection Engineer</b>	478	447	572	500	238	465	648
<b>Instrumentation Engineer</b>	506	427	608	713	248	560	729
<b>Maintenance Engineer</b>	482	484	544	448	260	550	652
<b>Mechanical Engineer</b>	420	481	545	435	259	559	739
<b>Plant Manager</b>	468	655	555	601	300	717	753
<b>Project Engineer</b>	500	469	578	528	314	563	670
<b>Project Manager</b>	488	969	650	576	324	730	600
<b>QA/QC Inspector</b>	384	534	574	530	200	510	726
<b>Quantity Surveyor</b>	354	444	444	450	251	414	911

## Global mobility

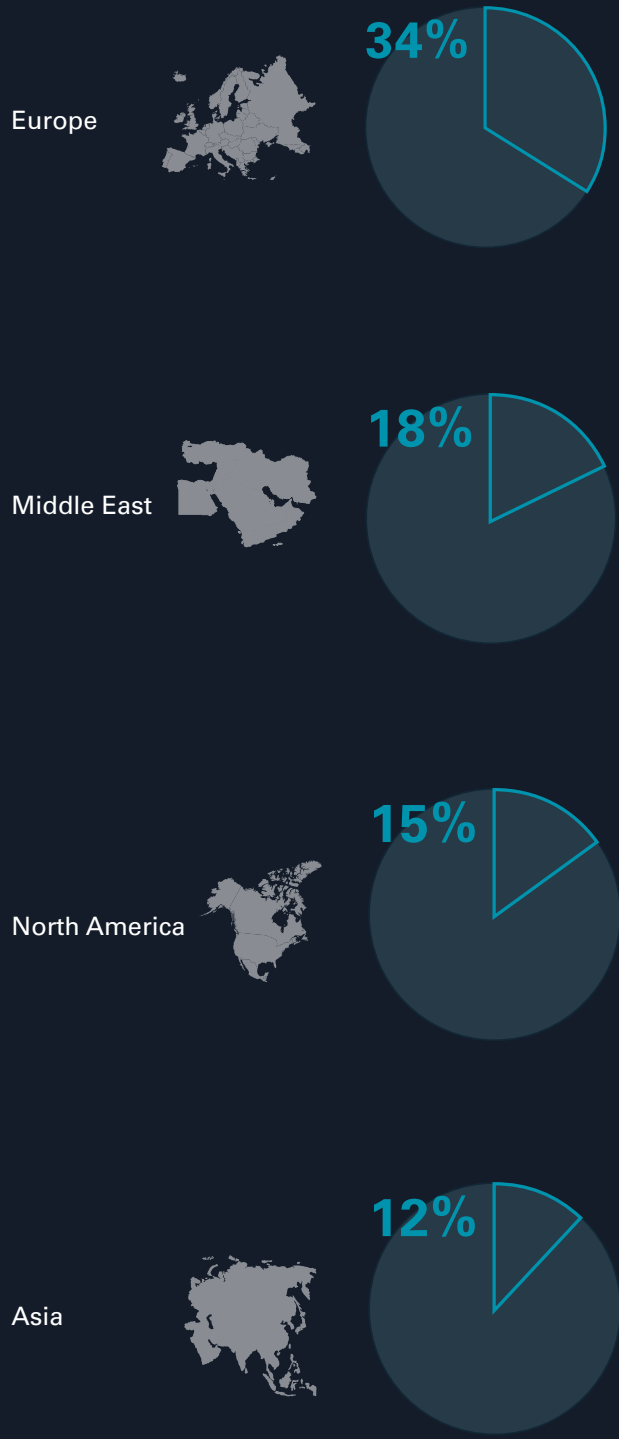
The theme of stability carries through into appetite for relocation, with 83 per cent open to a move, up marginally from 81 per cent last year. Just over a third (34 per cent) of the workforce are expatriates, and opportunities for cross regional transfers continue to trend upwards from 48 per cent in 2022 to 61 per cent in 2024.

**Europe, followed by the Middle East and then North America, are the top relocation destinations, with career progression as the main motivator for moving.**

While there has been a slight decrease since last year, career progression remains the main motivator for global mobility (51 per cent versus 58 per cent). The same barrier to moving – proximity to family – also retains the top spot. Women in particular worry about the prospects for long-term career advancement (11 per cent) while men are narrowly more concerned about their children’s education this year (12 per cent).

The most attractive destinations for relocation are Europe (selected by 34 per cent), followed by the Middle East (18 per cent), which edges above North America this year (15 per cent).

### WHERE WOULD BE YOUR PREFERRED LOCATION?





## Attracting and retaining talent

Despite apparent satisfaction with salaries and steady appetite for regional relocation, professionals are not completely rooted in place: 91 per cent are open to moving roles, the highest of the survey's sectors. Furthermore, while most prefer to stay within the power sector (58 per cent), 44 per cent are open to going elsewhere within the energy industry, and 23 per cent would consider roles in a new sector altogether.

As was the case last year, renewable energy is the sector of choice (cited by 54 per cent), followed by oil and gas (36 per cent). Beyond energy, 35 per cent would move to the technology sector. Manufacturing is becoming steadily more attractive, having been selected by 11 per cent in 2022, 16 per cent in 2023 and now 19 per cent in 2024.

The reasons for moving roles mimic those for moving regions: career progression is the primary motivator (chosen by 27 per cent), though by much less than last year (38 per cent). Interest in the wider industry is second (15 per cent), and the chance to work with innovative technology takes third (12 per cent), eclipsing ESG concerns which plummets to seventh place this year.

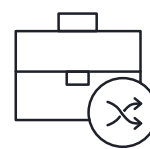
Commenting on the findings, Wenche Kjølås, independent director at several companies, sees: "A picture of fragile stability. Salary growth is good but not spectacular, and though career progression remains a top concern, professionals seem less convinced they need to make a move than last year to continue their career trajectory. Yet, openness to moving roles and regions is high, indicating a sector where professionals are settled but wouldn't take much prompting to reconsider. As a well-established industry, power professionals are self-assured and have much to offer other sectors."

Hiring managers should take note: 81 per cent of employees have been approached for another role in the last year, while over a third (34 per cent) have been approached six times or more. A significant minority (19 per cent) have received 11 or more approaches, with over one third of respondents saying more than half of these approaches came from beyond the power sector.



**91%**

are open to moving roles.



**44%**

are open to moving to another energy sector.

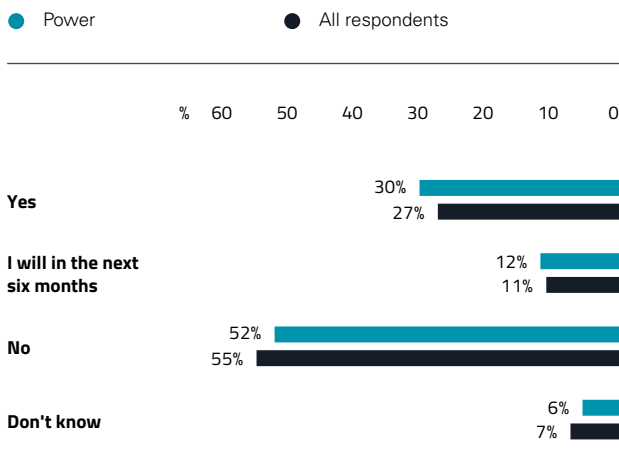
## AI in the workplace

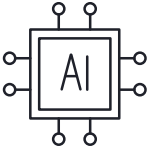
Though most power professionals (52 per cent) do not use AI in their role today, the sector is relatively forward-thinking. Thirty per cent of professionals say they already use AI, behind only renewables (32 per cent) and level with petrochemicals. A further 12 per cent expect they will be using AI within the next six months.

One third of respondents report that their workplace already has an AI policy, and 26 per cent have read it. Policies mainly focus on the benefits and objectives of using AI (58 per cent), with a reassuringly high focus on maintaining data protection, integrity and security (51 per cent).


However, six per cent of professionals are unsure whether they are already using AI, and 13 per cent are unsure if their workplace has an AI policy, suggesting more needs to be done with regards to internal communications.

### DO YOU USE AI IN YOUR ROLE? POWER VERSUS ALL SECTORS





**30%**  
of power professionals use AI in their role.



**13%**  
are unsure whether their workplace has an AI policy.

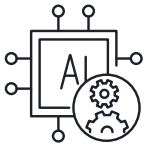


## Popular AI choices

The most popular tools among those already using AI seem to be generative tools such as Chat GPT, Bard AI and Claude. Nineteen per cent of respondents say they use these tools, versus 17 per cent prioritising machine learning and 15 per cent use artificial general intelligence such as autonomous vehicles, supercomputers, or deep AI software programs that mimic human intelligence. A further 19 per cent are unsure of which tools are used.

The main use cases for these tools are automated workflow and workplace collaboration (27 per cent), remote monitoring and automation (26 per cent), safety and inspection improvements (25 per cent), and data analytics for optimising energy production (25 per cent).

Ken Corriveau, CIO at Omnicom Media Group, comments: "There are a host of potential applications for AI in the power sector, from generic back-office functions to more specialist tasks such as distributed generation and trading optimisation. I would not be surprised to see these numbers leap upwards in the near future."



**27%**

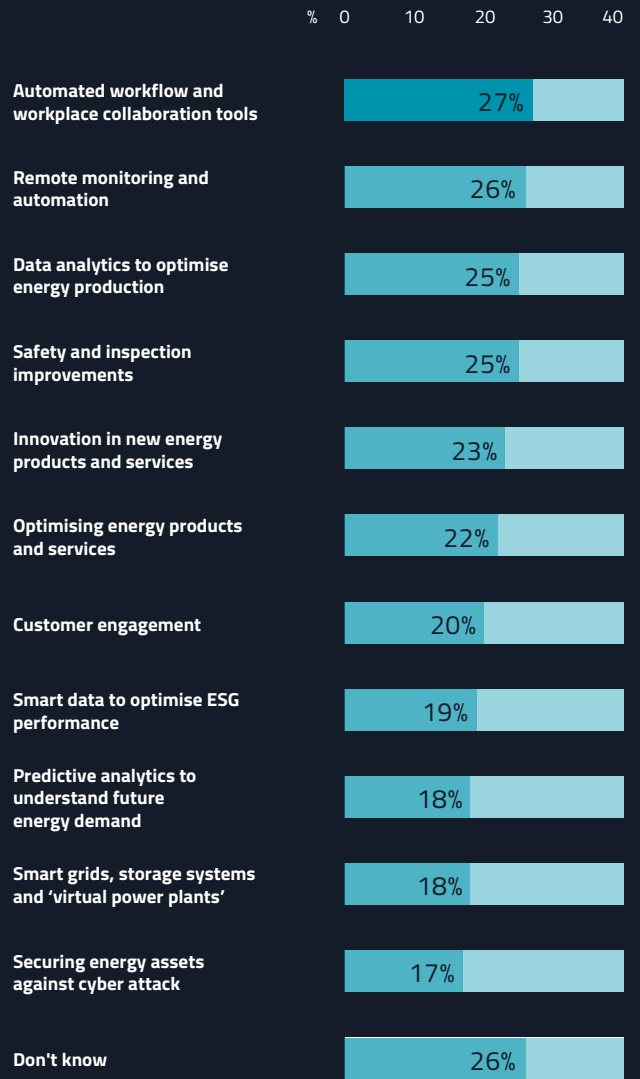
use AI for automated workflow and workplace collaboration.



**25%**

use AI for data analytics to optimise energy production.

### WHAT DOES YOUR COMPANY USE AI FOR?





## The future of AI

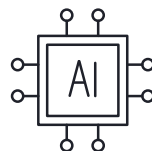
Professionals in the power sector are looking forward to an AI-powered future: 86 per cent are positive about AI's future impact and 53 per cent are 'very optimistic' – more than in any other sector.

On a personal level, 78 per cent look forward to increased productivity in their role, while 64 per cent are excited about new career opportunities, and 63 per cent about increased job satisfaction. Most (59 per cent) think AI will help them spend more time with family and friends.

Beyond benefits in their own roles, respondents see great advantages for the power sector. Twenty-eight per cent say AI will increase research, development, and innovation, and 27 per cent expect better optimised production, services, and solutions. Around one quarter believe AI will reduce labour costs (26 per cent) and improve predictive analytics and forecasting (23 per cent).

For Corriveau, this is cause for excitement: "Though AI does hold great promise for workflow improvements and similar implementations, I personally see the greatest potential in the power it can bring to research and innovation. There are parallels in the healthcare sector, where researchers expect to use AI to crunch vast amounts of data for things like drug development. The same logic applies to the energy sector, and it's great to see that power professionals seem to recognise this."

However, there are both risks and barriers to greater AI adoption. Respondents worry that the next two years could see a reduction in the human or personal touch (a concern for 43 per cent), lack of training leading to misuse or poor adoption (32 per cent), or cyber security risks (32 per cent).



**86%**

are positive about AI's future impact on the power sector.



**78%**

look forward to increased productivity due to AI.



**64%**

are excited about new career opportunities with AI.



**27%**

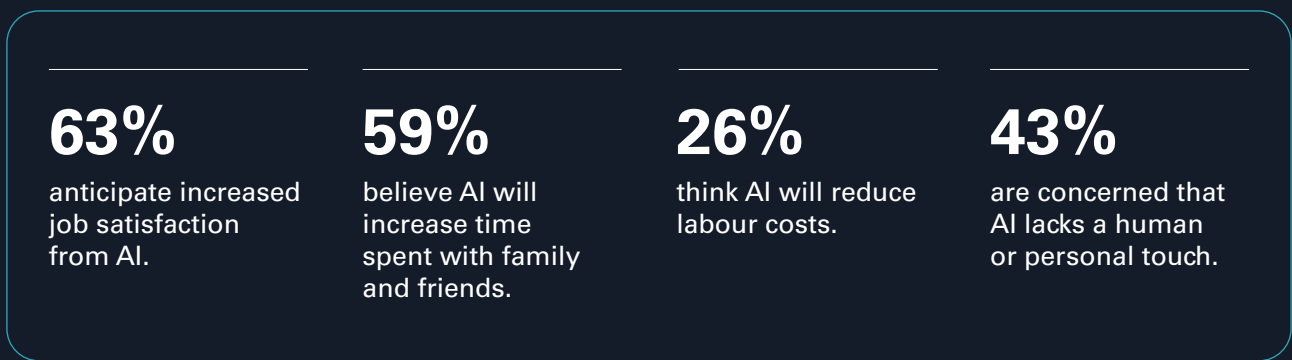
expect AI to optimise production, services, and solutions.

Professionals also worry about lack of clarity over which AI tools are the best fit for their company, insufficient investment in AI applications, and insufficient employee support for its roll-out.

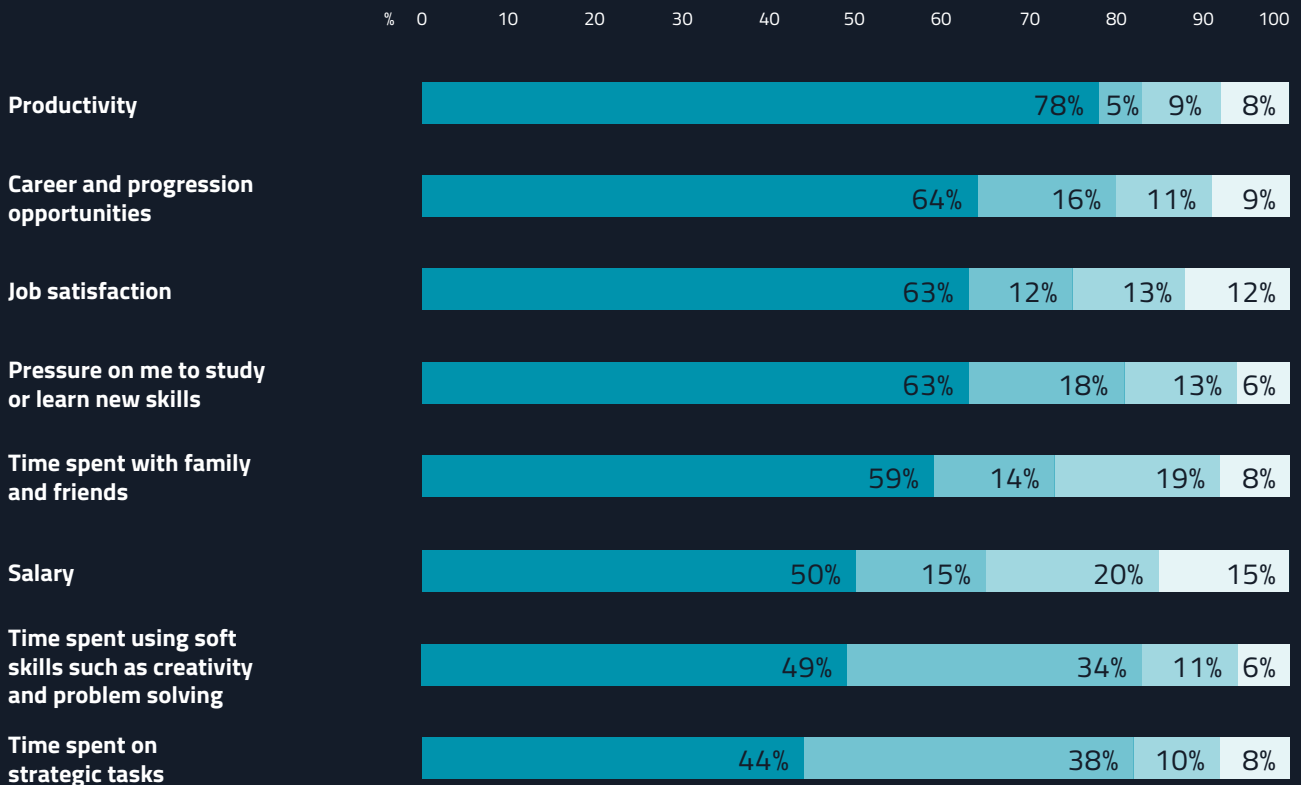
Kjølås says: “Power is a broad sector and varies considerably from region to region, and in many ways, it is the backbone of the industrial world. Here in Norway, when you think of power, you

think of hydroelectric plants with their long history and green profile. Elsewhere, you may think of coal or gas, which is working hard to become more sustainable. What’s consistent, though, is that if you are to attract new people to work in the sector, they must enjoy the tools they work with and the ways of working. AI shows a lot of promise in this respect, but people need greater clarity”

**HOW WILL AI POSITIVELY IMPACT YOUR ROLE?**



● Will increase    ● Will decrease    ● Will not change    ● Don't know





## AI skills for the future

Power professionals expect AI to increase demand primarily for technical skills. Around one quarter believe programming and software engineering (27 per cent), data science (24 per cent), machine learning (24 per cent), along with IT and cyber security (both 23 per cent) skills will be in higher demand.


In contrast, around one fifth of respondents predict an increased need for soft skills. Critical thinking and problem solving, and creativity and innovative thinking are both chosen by 21 per cent. Leadership and people management (17 per cent) and communication skills (15 per cent) rank lower.

Overall, 63 per cent of respondents believe AI will increase pressure on them to study or learn new skills, and they intend to rise to the challenge. The most popular areas for upskilling are machine

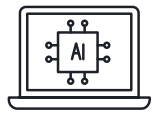
learning, programming and software engineering, plus IT skills and critical thinking and problem-solving abilities.

Janette Marx, CEO of Airswift, concludes: “Power professionals maintain the importance of technical skills in response to AI, and they aren’t afraid to meet that challenge head on. Though most in the sector are open to moving roles, we know they prize career progression opportunities, and hiring managers have a great chance to boost retention by giving them opportunities to develop the skills they have identified.”


### SKILLS IN DEMAND VERSUS SKILLS RESPONDENTS MAY BE INFLUENCED TO DEVELOP




**63%**  
believe AI will increase pressure to study or learn skills.



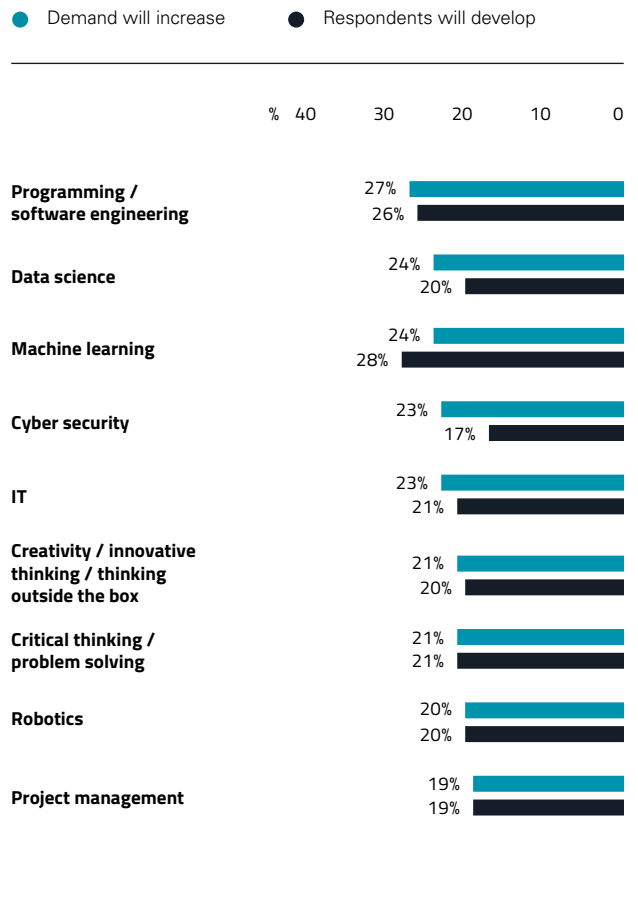
**6%**  
gap between cyber security skills in demand and development.



**#1**  
skill that respondents may develop: machine learning.



**#1**  
skill in demand: programming / software engineering.





**To attract new people to work in the sector, they must enjoy the tools they work with and the ways of working. AI shows a lot of promise in this respect.**

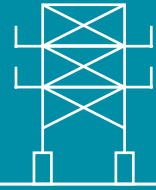
**–Wenche Kjølås**  
Independent Director

# Summary

The power sector's apparent stability has not made its professionals any less likely to seek a move to satisfy their need for career progression. However, the companies in the sector have a golden opportunity to satisfy that desire through greater investment in AI and upskilling its workforce.



# AI and the Future of Skills of Skills in Power



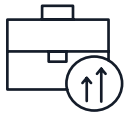
## Personal impact of AI in the next two years:



**78%** say productivity will increase.



**63%** say job satisfaction will increase.



**74%** say career and progression opportunities will increase.

## Top three uses of AI in the power sector



Automated workflow and workplace collaboration.



Remote monitoring and automation.



Data analytics to optimise energy production.

**54%**

of non-hiring professionals report a pay rise this year.

**83%**

are open to relocating for work, with Europe the top choice.

**30%**

of respondents use artificial intelligence in their role.

AI

## Top four skills that are in demand

- 1 Programming / software engineering
- 2 Data science
- 3 Machine learning
- 4 IT

## Top four skills that may be developed

- 1 Machine learning
- 2 Programming / software engineering
- 3 Critical thinking / problem solving
- 4 IT

# Nuclear

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**GETI**  
Global Energy Talent Index

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**Expert**  
**Andrew Crabtree**  
Founder, Get Into Nuclear

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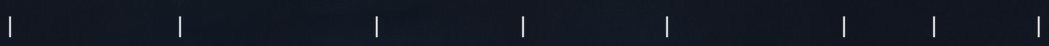
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# Nuclear

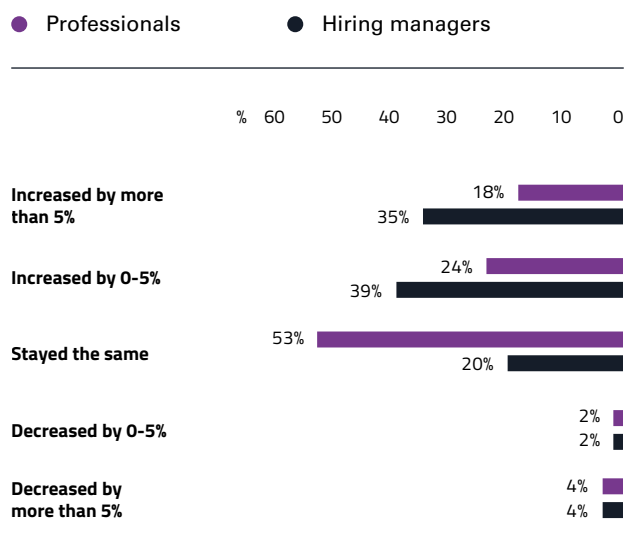
Last year's optimism for pay rises does not appear to have materialised for some this year, dampening spirits. However, signs of distress are hard to find, and there is much good to build on for hiring managers and professionals alike with the AI revolution creating demand for both soft and technical skills.

## Salaries

A large minority (42 per cent) of respondents report an increase in income this year – a fall from last year (47 per cent), and lower than elsewhere in the energy sector. Hiring managers have a more optimistic outlook though, with 74 per cent reporting increases in their sector, and 35 per cent reporting increases of more than five per cent.

The future appears brighter: 51 per cent of workers and 78 per cent of hiring managers anticipate raises in the coming year. However, it is notable that last year 73 per cent of workers expected a raise – reality (42 per cent) seems to have dented their optimism.

### PAY CHANGE EXPECTATIONS FOR NEXT YEAR REPORTED BY WORKERS AND HIRING MANAGERS



**PERMANENT WORKER ANNUAL SALARY, USD (GLOBAL AVERAGE BASED ON SIX YEARS' EXPERIENCE)**

	Asia	Europe	Middle East	North America
<b>Business Development Manager</b>	45,448	49,496	45,898	74,475
<b>Chemical Engineer</b>	61,325	64,753	55,106	75,712
<b>Commercial Manager</b>	71,397	96,993	97,551	126,115
<b>Commissioning Manager</b>	76,689	91,614	90,951	159,374
<b>Construction Manager</b>	68,630	90,872	91,797	109,281
<b>Electrical Engineer</b>	63,650	98,202	76,592	103,130
<b>Environmental Engineer</b>	53,528	60,943	61,245	124,033
<b>Facilities Manager</b>	52,631	75,377	62,427	120,325
<b>HSE Manager</b>	57,266	99,677	78,966	132,822
<b>Maintenance Engineer</b>	57,266	66,565	67,997	127,919
<b>Mechanical Engineer</b>	48,444	75,738	74,296	89,845
<b>Nuclear Engineer</b>	82,276	84,500	75,917	82,837
<b>Planner/Scheduler</b>	63,585	53,934	59,238	107,398
<b>Process Engineer</b>	59,808	82,433	80,324	128,158
<b>Project Manager</b>	74,508	94,205	80,017	78,333
<b>Purchasing Manager/Buyer</b>	55,833	63,279	52,023	92,325
<b>QA/QC Manager</b>	63,546	87,217	69,897	122,402
<b>R&amp;D Scientist</b>	68,440	72,573	54,934	104,188
<b>Supply Chain Manager</b>	54,258	84,761	64,916	117,391
<b>Training Coordinator</b>	68,540	72,832	69,555	89,226



**CONTRACT WORKER DAY RATE, USD (GLOBAL AVERAGE BASED ON SIX YEARS' EXPERIENCE)**

	Asia	Europe	Middle East	North America
<b>Business Development Manager</b>	399	495	452	674
<b>Chemical Engineer</b>	362	478	436	581
<b>Commercial Manager</b>	510	682	669	908
<b>Commissioning Manager</b>	548	700	665	1,038
<b>Construction Manager</b>	463	569	659	891
<b>Electrical Engineer</b>	390	588	570	960
<b>Environmental Engineer</b>	363	475	457	957
<b>Facilities Manager</b>	360	471	439	859
<b>HSE Manager</b>	389	566	576	955
<b>Maintenance Engineer</b>	368	471	545	781
<b>Mechanical Engineer</b>	344	490	542	850
<b>Nuclear Engineer</b>	493	570	553	750
<b>Planner/Scheduler</b>	334	515	492	855
<b>Process Engineer</b>	411	544	547	1,044
<b>Project Manager</b>	442	609	778	776
<b>Purchasing Manager/Buyer</b>	312	580	601	637
<b>QA/QC Manager</b>	432	535	554	793
<b>R&amp;D Scientist</b>	343	519	418	851
<b>Supply Chain Manager</b>	387	515	501	880
<b>Training Coordinator</b>	287	354	332	577

## Global mobility

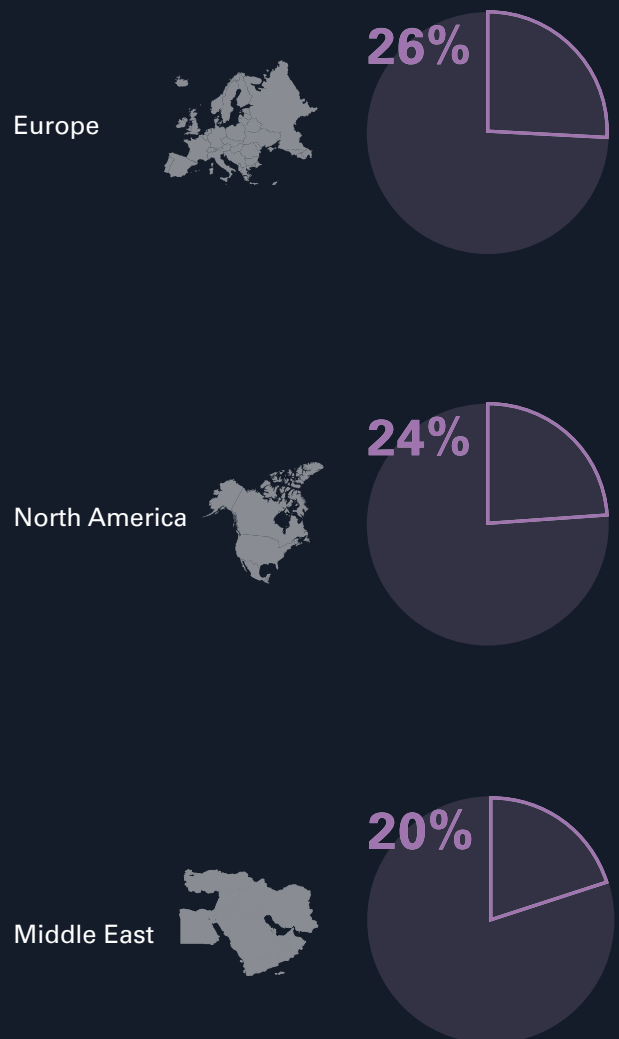
Only 65 per cent of respondents are open to relocation this year, a 12 per cent decrease from last year. Fifty-eight per cent say their employer promotes cross-regional transfers, and a third of workers are expatriates, but 35 per cent simply do not wish to relocate – up from 23 per cent last year.

For those open to a move, career progression is the primary enticement (selected by 42 per cent). Lifestyle and low cost of living (13 per cent) and other reasons trail distantly. The most attractive destinations are Europe (26 per cent), North America (24 per cent), and the Middle East (20 per cent), roughly in-line with their peers across the energy sector. On the other hand, those who wish to stay put point to proximity to family (45 per cent) and lack of opportunities (14 per cent) to explain their reluctance.

**The nuclear sector stands out in energy industry mobility, with international moves often hindered by stringent security clearance requirements.**

Andrew Crabtree, Founder of Get Into Nuclear, comments: “The nuclear sector is the odd one out when it comes to energy industry mobility. That may be because nuclear power plants, more than others, tend to create long-term communities around them, so that workers may feel deeper roots. Security clearance can also be a significant administrative hurdle when moving between countries. Companies and countries rightly take nuclear security very seriously.”

### WHERE WOULD BE YOUR PREFERRED LOCATION?



## Attracting and retaining talent

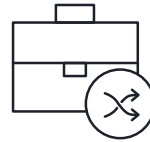
The apparent rootedness of the sector's workforce should not be a cause for complacency on the part of hiring managers, as 77 per cent of respondents would consider switching to a new role.

While half are open to a new role within nuclear, 40 per cent would move to another energy sector, and 24 per cent would leave energy behind entirely.

Within energy, the most popular destination is renewables, identified as of-interest by 42 per cent of respondents. Oil and gas – last year's top destination – falls to third (19 per cent), behind power (27 per cent). Technology, transport, logistics and infrastructure, and manufacturing are popular non-energy choices.

**Nuclear professionals seem more settled in their roles than many of their peers across the wider energy sector, despite lower reported pay increases.**

– Janette Marx,  
CEO of Airswift



**40%**

would move to another energy sector.



**24%**

would consider leaving the energy sector entirely.

When asked what would motivate a move, nearly one-third of respondents noted career progression, followed by interest in the wider sector (17 per cent) and the chance to work with interesting technology (10 per cent).

Crabtree adds: "It's notable that remuneration and benefits don't make the top three reasons for a move here, especially given nuclear's relatively lacklustre performance on salary growth this year. But 'career progression' can mean a lot of different things, so I'd caution against interpreting this as satisfaction with pay. In fact, the sector needs to take care not to slip behind on that front."

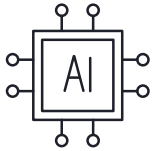
This is underlined by the fact that 79 per cent of workers have been approached for another role in the last year, with 10 per cent having been contacted more than 20 times. Many of these offers are coming from beyond the sector.

Janette Marx, CEO of Airswift, comments: "Nuclear professionals seem more settled in their roles than many of their peers across the wider energy sector, despite lower reported pay increases. That's good news for now, but if their optimism for future pay increases isn't rewarded, then they may not be so settled in future."


## AI in the workplace

Most (61 per cent) respondents do not use AI in their role today – higher than in any other energy sector. In fact, just over a quarter do (27 per cent), while another nine per cent expect to do so within six months.

A third of respondents report that their workplace already has an AI policy in place, and 24 per cent have read it. This may suggest that the 27 per cent using AI are largely diligent about doing so within the confines of company policies.

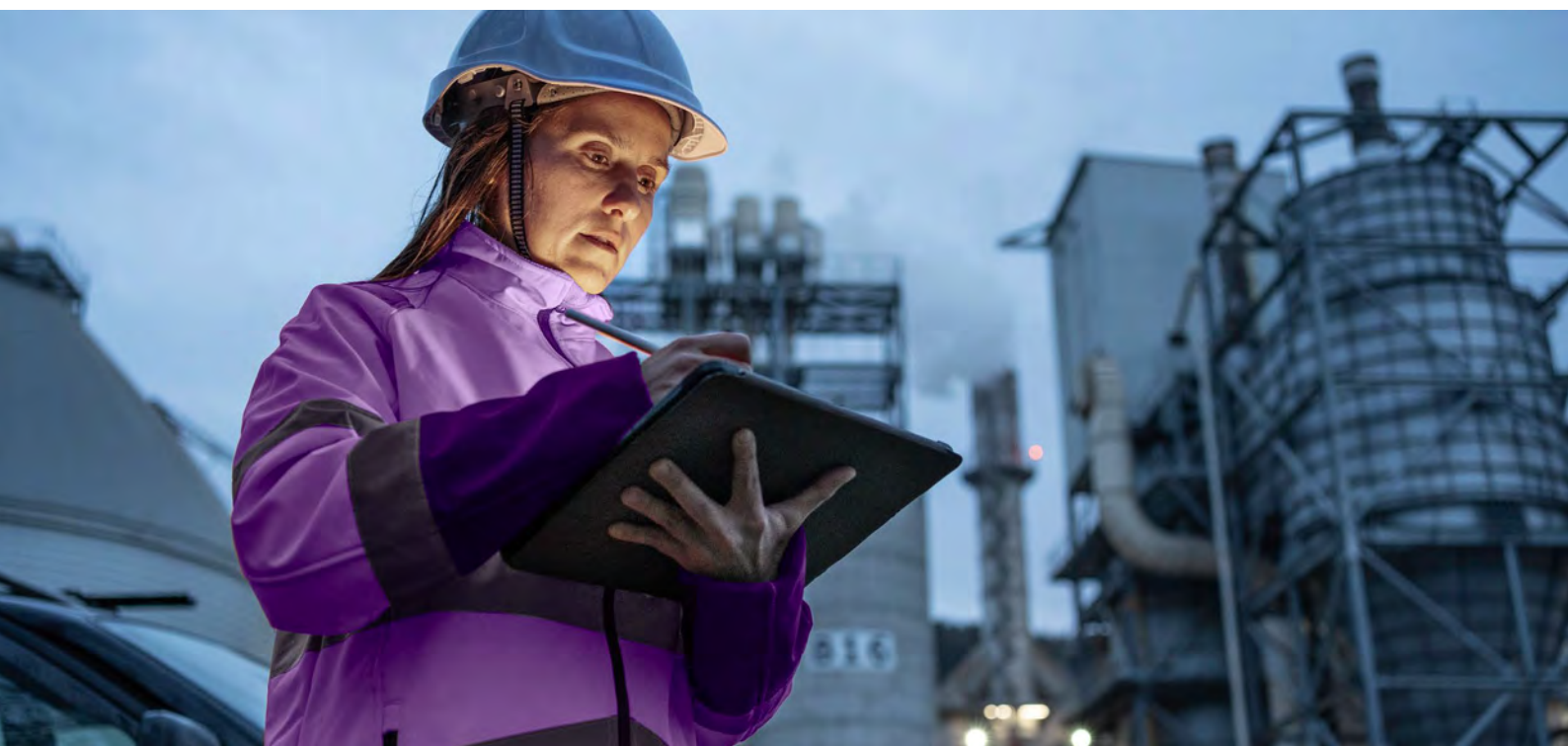
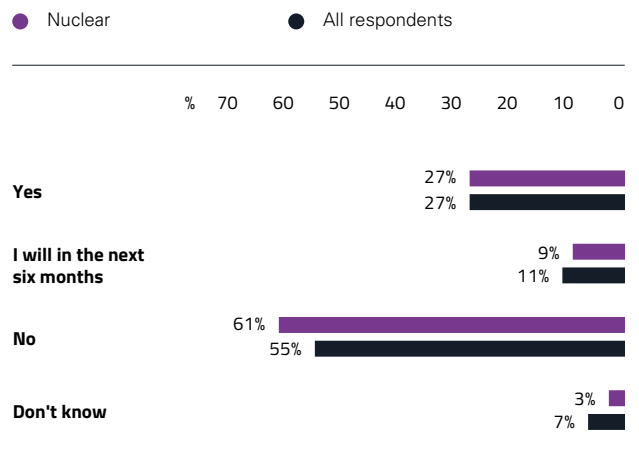


**61%**  
do not use AI in their role.



**32%**  
of companies have an AI policy.

### DO YOU USE AI IN YOUR ROLE? NUCLEAR VERSUS ALL SECTORS




## Popular AI choices


The most popular tools used by nuclear’s AI vanguard are machine learning and robotic process automation applications, both selected by 18 per cent of respondents. In contrast, 15 per cent say they use generative AI such as ChatGPT – compared to other sectors, where this is the top or joint-top use case.

The top use cases for these tools are automated workflow and collaboration (26 per cent). Data analytics to optimise performance, and safety and inspection improvements closely follow (both 23 per cent).

Ken Corriveau, formerly the CIO at Omnicom Media Group, suggests: “What we may see here is lower uptake of AI by nuclear professionals, but greater emphasis on careful implementation and experimentation from the top-down, within strictly confined policy. By their nature, generative AI tools today tend to be used by individuals experimenting within their roles. Perhaps there is less latitude for this in nuclear, given the extra safety and security considerations and a more cautious culture.”

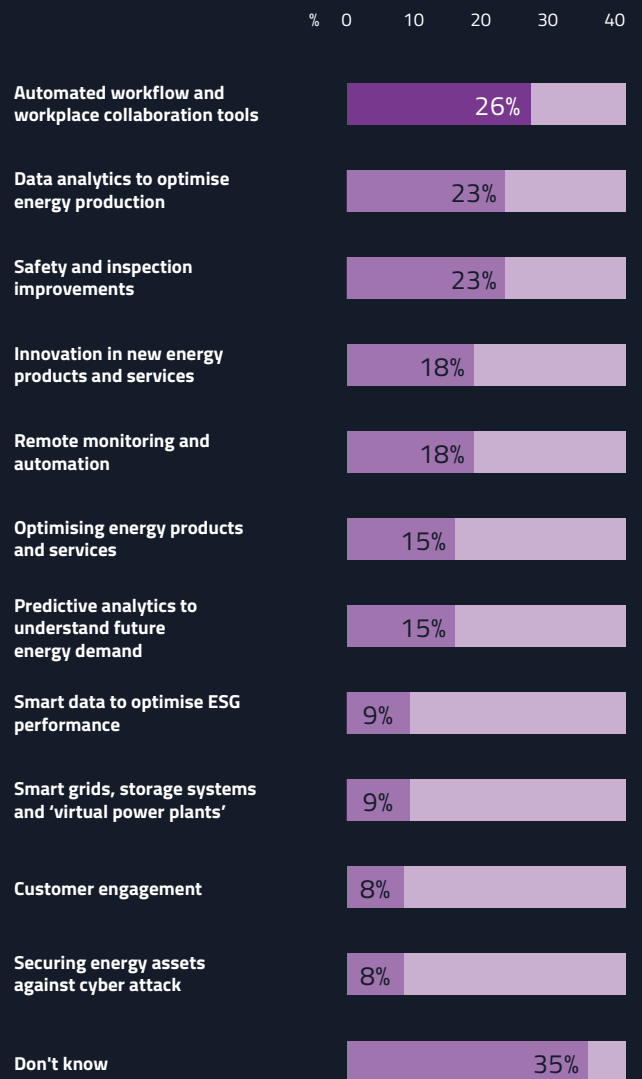


**23%**  
use AI for safety and inspection improvements.



**26%**  
use AI for data analytics to optimise performance.

### WHAT DOES YOUR COMPANY USE AI FOR?



## The future of AI

Optimism over AI’s potential future role in nuclear is complicated. Forty-two per cent of respondents are fairly optimistic and 36 per cent are very optimistic about its impact. Taken at face value, this appears to be an enthusiastic response. However, in other sectors the combined figure for optimism is higher, and the ‘very optimistic’ outweigh the ‘fairly optimistic’.

Still, optimism is there. So, what stands in the way of a brighter future for AI in nuclear? Respondents say insufficient investment in AI applications is the number one challenge to making greater use of AI for the sector, followed by lack of clarity on which tools offer the best fit for the company and insufficient or poor-quality data.

If these barriers can be overcome then 69 per cent of respondents look forward to greater productivity thanks to AI in the next two years, while 52 per cent anticipate new career and progression opportunities and 47 per cent expect greater job satisfaction. Only 17 per cent expect downward pressure on salary, career progression or job satisfaction, though 58 per cent recognise they will be under pressure to study or learn new skills.

Beyond their professional lives, respondents look forward to great benefits for the sector from greater AI use. Thirty per cent say AI will lead to an increase in research, development and innovation, and 27 per cent say it will improve predictive analytics and forecasting. On the other hand, 38 per cent identify an emerging risk from lack of human or personal touch – although this anxiety is higher in other sectors.

**36%**

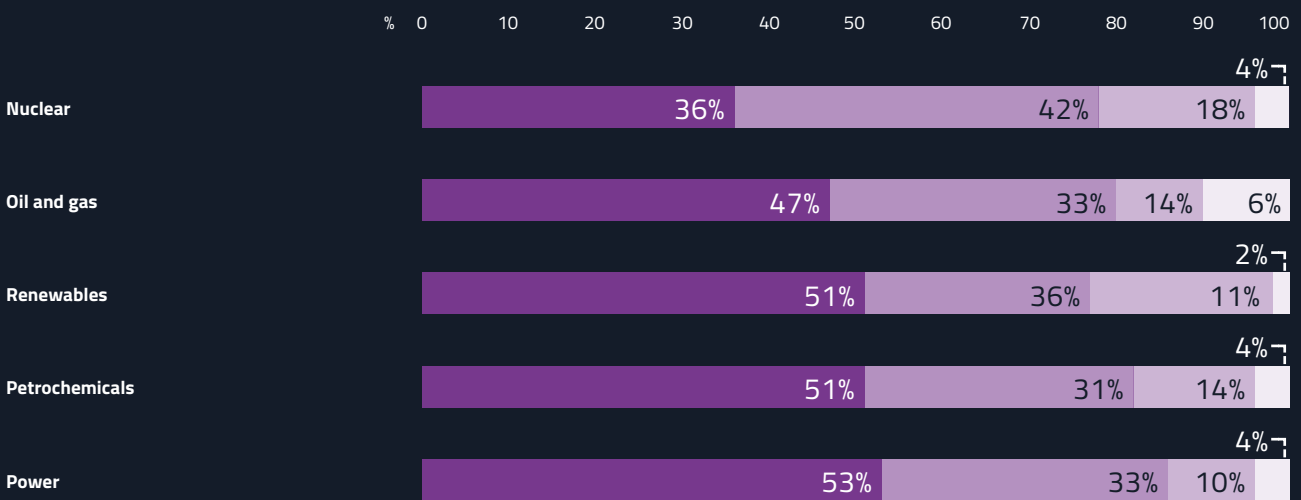
are very optimistic about the future impact of AI.

**47%**

expect increased job satisfaction from AI.

### HOW OPTIMISTIC ARE YOU ABOUT THE FUTURE IMPACT OF AI ON YOUR SECTOR?

● Very optimistic    ● Fairly optimistic    ● Not very optimistic    ● Not at all optimistic



# AI skills for the future

What expectations will an AI-enabled nuclear sector have for its workforce? Both technical and soft skills will be increasingly valuable.


All respondents believe AI will boost the need for various skills. Specifically, 28 per cent foresee a higher demand for critical thinking and problem-solving abilities while 22 per cent say the same for creativity / innovative thinking.

On the technical side, 24 per cent foresee a greater need for machine learning expertise, 22 per cent say the same of IT, and 20 per cent say both data science and cyber security will be important.


However, the skills professionals report interest in developing diverge from this list considerably. Data science and project management skills are the most popular (both selected by 29 per cent), with machine learning, data visualisation, and software skills all following at 24 per cent. The ‘softer’ skills of leadership and creativity apparently fall behind.

Marx considers: “There is an opportunity for ambitious nuclear professionals to step into this gap and provide the leadership and innovation that the sector will need. Technical skills will always be in demand, but tomorrow’s most valuable professionals will be those who can bridge the technical and ‘human’ side, especially as AI becomes more widespread.”


## SKILLS IN DEMAND VERSUS SKILLS RESPONDENTS MAY BE INFLUENCED TO DEVELOP




**#1**  
skill in demand:  
critical thinking /  
problem solving.



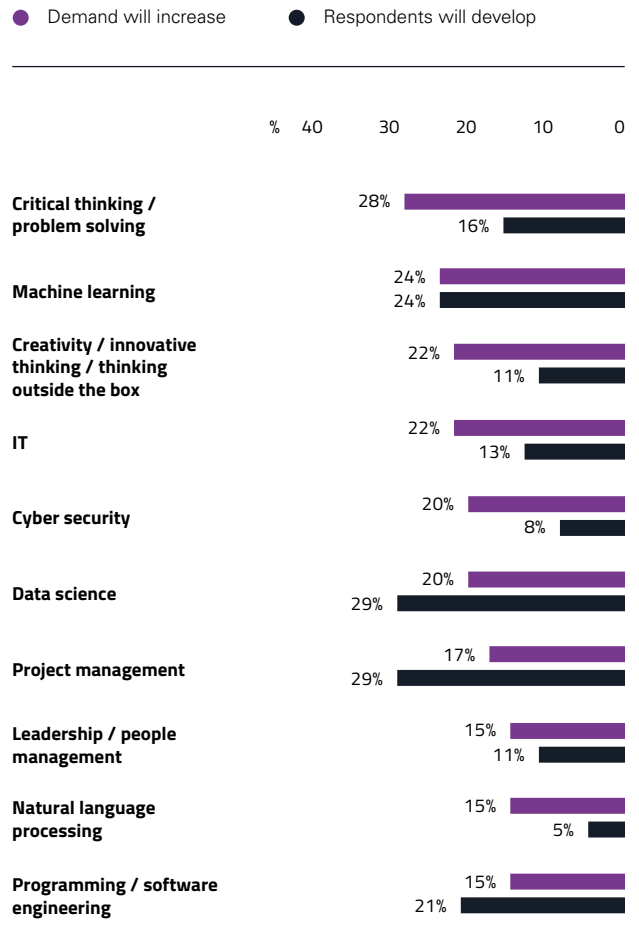
**#1**  
skill that  
respondents may  
develop: data  
science or project  
management.



**12%**  
gap between  
cyber security  
skills in demand  
and development.



**24%**  
predict a greater  
need for machine  
learning expertise.



A person wearing a full-body yellow hazmat suit, a clear respirator mask with a circular filter, and purple nitrile gloves is leaning on a metal railing. The background is a blurred industrial environment with large cylindrical tanks and metal pipes.

**There is an opportunity for ambitious nuclear professionals to provide AI-related leadership and innovation that the sector will need.**

– Janette Marx  
CEO, Airswift



# Summary

At first glance, the nuclear sector does not seem as energised as others in terms of salary and mobility, nor as enthusiastic about new AI-powered technology. However, nuclear remains a vital part of the energy mix and hiring managers and professionals alike will benefit from engaging fully with the best that these technologies have to offer.



# AI and the Future of Skills in the Nuclear Sector



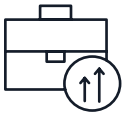
## Personal impact of AI in the next two years:



**69%**  
say productivity will increase.



**47%**  
say job satisfaction will increase.



**52%**  
say career and progression opportunities will increase.

## Top three uses of AI in the nuclear sector



Automated workflow and workplace collaboration tools.



Data analytics to optimise energy production.



Safety and inspection improvements.

**42%**

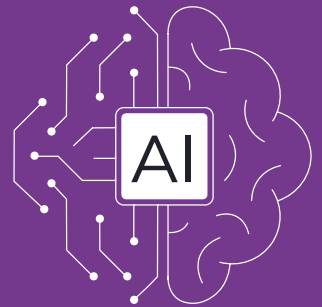
of non-hiring professionals report a pay rise this year.

**65%**

are open to relocating for work, with Europe the top choice.

**27%**

of respondents use artificial intelligence in their role.



## Top four skills that are in demand

- 1 Critical thinking / problem solving
- 2 Machine learning
- 3 Creativity / innovative thinking
- 4 IT

## Top four skills that may be developed

- 1 Project management
- 2 Data science
- 3 Machine learning
- 4 Data visualisation

# Summary

AI is a topic that has only begun to dominate news headlines and workplace conversations in the past year, but GETI 2024 shows that it is already becoming an invaluable tool for energy industry professionals. What's more, there is every indication that this so-far subtle shift will swell to a seismic one in the near future.

Some trends have not changed, of course. To varying degrees, energy professionals across sectors report good salary growth and optimism for the future in this respect. The workforce remains a mobile one, despite a greater attachment to post-pandemic working patterns reported in last year's survey. And, of course, hunger for career progression ensures that eyes and ears are open to offers from elsewhere, both within and beyond the wider energy sector.

AI may truly be transformative for the energy sector in a multitude of ways, from accelerating cutting-edge research and development, to improving safety and security. However, what is clear from this year's survey is that organisations' approach to AI will also prove a critical determinant in their success at attracting and retaining talent, from training opportunities to recruitment priorities.

Though they do recognise risks, workers want to augment their work lives with AI tools to boost their productivity, allow them to refocus on more interesting tasks, and potentially improve their work-life balance. However, they are plainly aware that this won't happen automatically, and that they will need to invest in education and skills to reap the benefits. As such, it will be those organisations that can harness and feed that appetite for learning and growth that stand to best succeed.

Not only will they have a workforce better trained to make the most of new tools, but they will gain a workforce more engaged with their roles and, hopefully, happy with their employers. This can be a major boost to recruitment and retention, and those organisations that can move quickly and get ahead of the pack will be in a prime position to attract talent from those which fall behind.

If the prize is great, so too must be the effort. We see organisations investing in tools and crafting AI policies to guide their use, but more training, along with wider utilisation of entry-level AI, will ensure the entire workforce is part of this transformative journey. Given the rapid development of the sector, companies need to be proactive in their approach to AI, tackling the challenge of navigating a constantly changing landscape of tools and best practices head-on.

AI will increasingly play a role in talent acquisition, serving as a key differentiator for employer brands, particularly for attracting younger workers, while broadly redefining job roles and hiring checklists. Employers will need to bring in new skills from industries such as technology and ensure training priorities are aligned with projected skills gaps.

Employers who navigate these challenges with thought and agility may be the standout success stories of the following years. In parallel, professionals who develop skills in step with the energy industry's AI transformation will increase their potential for highly rewarding and fulfilling careers in everything from robotics and automation to software programming and cyber security.

