



Generation
2050

Generation 2050: 25 years out

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Forewords ...

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The energy transition is the defining challenge - and opportunity - of our time. Achieving net zero while ensuring secure, affordable energy demands a transformation in how we produce, distribute, and consume energy. It concerns technology, policy, investment, and behaviour, but above all, it is a human challenge led by both today's and tomorrow's leaders.

The Energy Institute has long worked to advance understanding and connect the global energy workforce. Through *Generation 2050*, we spotlight the ambitions of emerging leaders. Their insights call for faster deployment of clean technologies, inclusive policies, innovative finance, and global collaboration.

What's striking in this report is their clarity and determination. For future leaders, the transition is not optional - it shapes their careers and outlook. But their drive must be matched by today's decision-makers. We must invest in education, embrace diversity, and open pathways for young professionals.

Their motivation is inspiring but they are clear about the need for urgent action. That rallying call should motivate all of us to accelerate progress and build a system capable of reaching net zero by mid-century. I'm proud to present this report on behalf of the Energy Institute and urge all energy professionals at every stage of their career to reflect on these important insights.

Karolina Zieba

The energy transition is not a distant horizon - it is the context in which today's young professionals are building their careers. For us, the question is not whether we will be involved in shaping the future of energy, but how prepared we are to lead it.

This report was written from within the generation it seeks to represent. As a young professional working in the energy sector, I approached this project with a dual lens: as a researcher committed to evidence-based insight, and as someone navigating the very challenges and opportunities described in these pages.

The findings are both encouraging and confronting. They reveal a generation driven by purpose, yet increasingly skeptical about the world's ability to meet its climate and energy access goals. There is a clear appetite for leadership, but also a demand for structural change - more inclusive pathways, stronger policy frameworks, and tangible investment in skills, mentorship, and real-world experience.

What's most striking is the consistency of the message. Across regions, disciplines, and backgrounds, young professionals are calling for the same things: meaningful agency, visible progress, and a system that aligns ambition with action.

I hope this work contributes to a more informed and inclusive dialogue between generations. The transition to net zero is a shared endeavor. And it will require all of us, across sectors and seniority levels, to listen, learn, and lead together.

1. Introduction to Generation 2050

The climate crisis: a defining challenge

The climate crisis is not a distant storm on the horizon - it is the defining challenge of our time, and its impact is already being felt. From melting ice caps to record-breaking heat waves, the world is witnessing the consequences of a warming planet. While the threat is real, so too is the opportunity for bold, transformative action.

A call to action for energy professionals

As the 2020 publication *Generation 2050 Manifesto* states, “[young professionals] will inherit a sector that will be judged on how it has responded [to climate change].” The urgency of the climate crisis, coupled with persistent global energy inequality, demands bold, inclusive, and forward-thinking leadership. *Generation 2050* is the Energy Institute’s answer to that call - a commitment to nurturing the leaders of tomorrow by listening to them today.

Generation 2050 is an evolving professional initiative by the Energy Institute with the strategic goal of attracting, developing, and equipping a diverse future energy workforce. It is more than a programme - it is an intergenerational movement aimed at empowering and accelerating the growth of young professionals and aspiring leaders. By 2050, today’s early-career professionals will be the ones leading the charge. This initiative ensures they are heard, prepared, and supported.

Generation 2050 takes a campaign-driven approach, integrating a variety of events, papers, and collaborative activities that foster professional development and amplify the voices of those entering the energy industry. The initiative is led by young professionals within the Energy Institute and supported by a broad coalition of industry partners,

And so here we stand - the young energy professionals of today - ready to confront the challenges, overcome the barriers, and lead the charge toward a sustainable energy future as the leaders of tomorrow.

mentors, and senior professionals who believe in the power of shared learning.

Generation 2050 is for young professionals and aspiring leaders who are passionate about shaping a sustainable energy future. It’s also for those committed to supporting this next generation - mentors, experts, and allies willing to share knowledge and experiences to empower young voices. Together, we form a community ready to drive meaningful change. Our initiative is needed to empower young leaders, drive innovation, and ensure a smooth transition to a sustainable energy future. It builds the skills and collaboration required to tackle climate challenges and achieve global energy access.

Our mission: five pillars of progress

Through *Generation 2050*, we must:

1. **Champion collaboration:** Solving the climate crisis demands global teamwork. We must break down barriers between industries, countries, and communities - because only by working together can we create real, lasting change.
2. **Accelerate progress:** The path to a sustainable future is uncertain - but that’s exactly why we must act with urgency and purpose. Progress will come when we hold ourselves accountable, and also encourage accountability among those in our communities - our colleagues, friends, managers, and peers. Keeping ourselves and the people around us accountable to the energy transition will generate progress.
3. **Grow skills:** Innovation is key to creating a sustainable energy future - but it’s only possible if we close the skills gap. We must invest in training, share knowledge, and empower each other to lead the transition.
4. **Empower leadership:** Progress depends on trusted, inclusive leadership. To shape the future, young professionals must not only be heard - they must help lead. We need to influence decisions, challenge the status quo, and handshake commitment with the current energy leaders.
5. **Ensure inclusivity:** The energy transition must leave no one behind. From early career professionals to entire communities, everyone has a role to play. True progress requires broad participation and societal buy-in - because without it, there is no lasting transition.



2. The Generation 2050 25-years out report

Why the next 25 years matter

In the past quarter of a century, the energy sector has undergone seismic shifts: the rise of renewables, the mainstreaming of climate policy, and the growing urgency of the net zero transition. Recent global events have reshaped the energy policy landscape, prompting many governments to reassess their net-zero commitments in light of energy security, affordability, and geopolitical tensions. With 2050 being closer than 2000, it's the perfect moment to pause, reflect, and prepare for the future we want to build.

The Energy Institute's Generation 2050 initiative recently conducted a comprehensive survey with a diverse group of energy professionals, including scientists, engineers, policy specialists, and commercial experts

from across the energy spectrum. The results of this survey, included within this paper, will help to guide us in shaping the future. The results explore how young professionals engage with their careers and what motivates them to lead change. Additionally, it highlights critical skill gaps and advocates for educational programs and training that equip the workforce with the knowledge needed to meet evolving industry demands.

This effort follows the 2020 [Generation 2050 Manifesto](#) and is a step forward in understanding the changing aspirations, challenges, and needs of the next generation of world energy leaders.

The central question

At the heart of this work is a vital question:

What are the most critical actions and qualities required from today and tomorrow's energy leaders to advance climate change mitigation and ensure universal energy access?

To answer this question, we turned to the voices of over 1,000 young professionals. The answers provided throughout this report will guide efforts to promote leadership that is visionary, inclusive, and capable of driving urgent progress.

3. Survey methodology

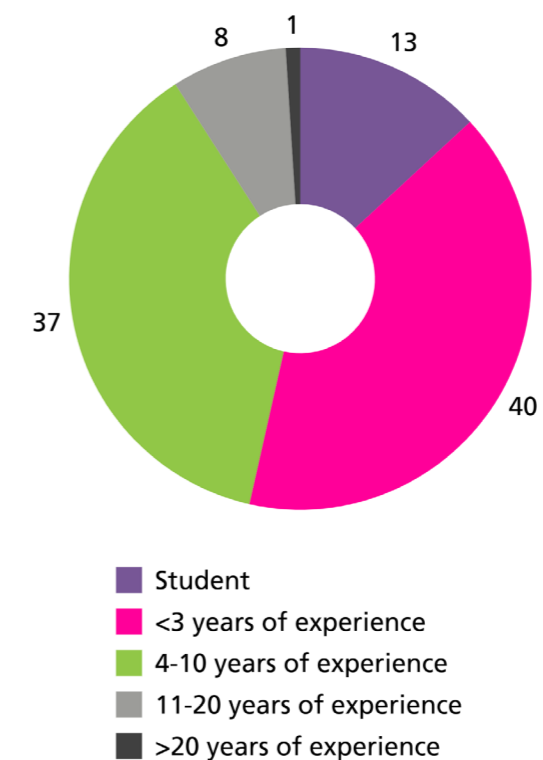
The Generation 2050 initiative conducted a comprehensive survey targeting young professionals and students in the energy sector. The survey aimed to capture their perspectives on climate change, energy access, career motivations, and the skills needed for future leadership. It included both quantitative (multiple-choice, ranking) and qualitative (open-ended) questions.

The report supplements survey data with a series of "handshake between generations" interviews, featuring conversations between young and senior professionals across regions (Europe, Africa, Asia, Middle East, and South and Central America). These interviews provide context, personal insights, and intergenerational perspectives on energy transition challenges and opportunities.

Who took part in our survey?

The survey collected responses from 1,008 young professionals and students in the energy sector. With a predominantly young workforce, 40% of the responders have under three years of experience, 37% between four and ten years of experience, and only 1.9% exceed twenty years' experience.

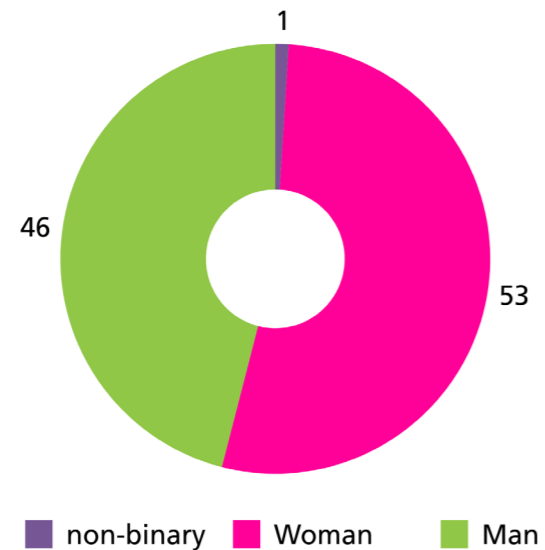
Years of experience of responders



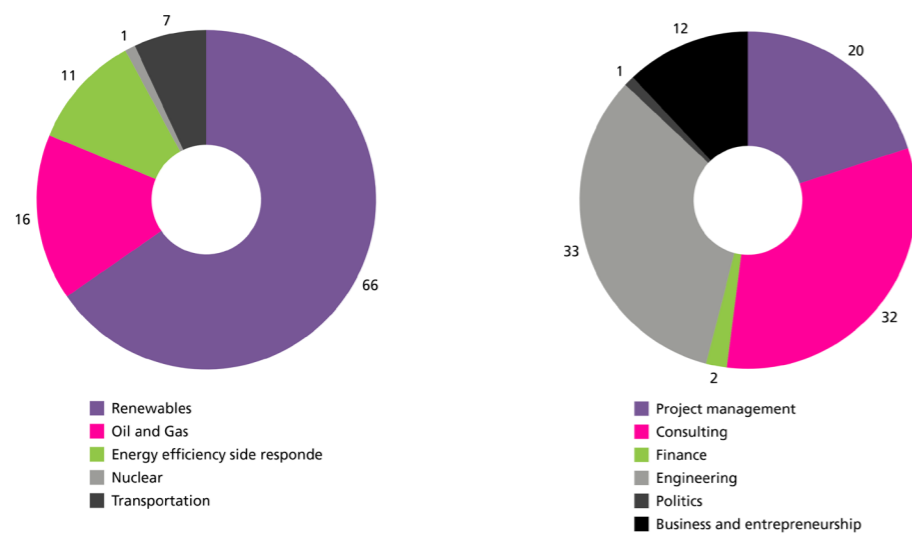
4. Survey results

In terms of gender, 53% identified as men, 46% as women, and 1% as non-binary. Ethnically, the majority were White (58%), followed by South Asian (12%) and East Asian (11%). Geographically, most respondents (69%) were based in Europe, with smaller proportions in Africa (10%), Asia and the Middle East (6.4% each), and the Americas (7.7%).

Self described gender of responders (%)



The respondents' workplaces were largely dominated by renewables, which account for 65% of respondents, while oil and gas represent 16%, and energy efficiency 11%. The leading professions among participants include engineering (33%), consulting (32%), and project management (20%).



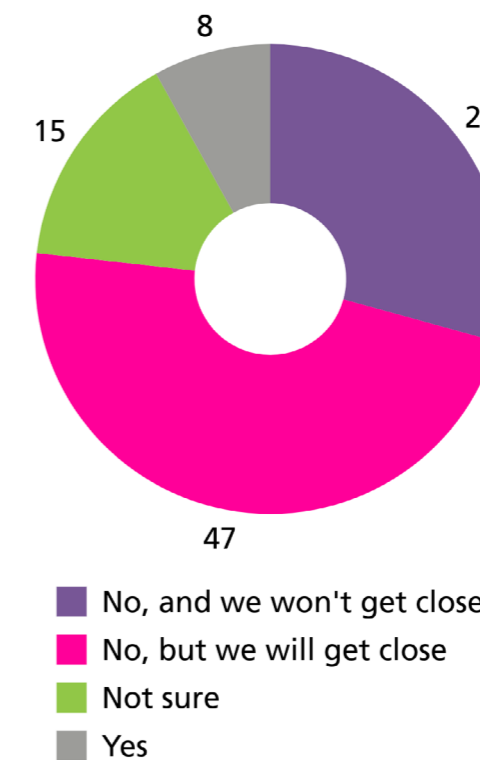
The survey is predominantly European-centric, which may skew results and limit the global applicability of findings. As with most voluntary surveys, there is a risk of self-selection bias - those most passionate about climate and energy issues are more likely to participate. This is exacerbated by the fact that the majority of respondents work in renewables.

One key message from the Generation 2050 survey stands out: young energy professionals are deeply motivated to tackle climate change and energy inequality, yet they remain pessimistic about the world's ability to meet key climate and energy access goals. While 86% of respondents chose their careers to address these challenges, only 8% believe the world will succeed in limiting global warming to below 2°C, and just 1% think universal energy access by 2030 is achievable. This contrast highlights a generation that is personally driven to make a difference but deeply sceptical about our collective progress and sceptical about the future.

Will the world limit global temperature rise to well below 2°C warming?

Key message: The energy workforce shows a staggering 10:1 ratio of pessimism to optimism regarding climate goals, stressing a serious crisis of confidence in the current system and progress.

Will the world limit global temperature rise to well below 2°C warming?



There is overwhelming scepticism about whether the world will limit global temperature rise to well below 2°C. A total of 76% believe we will fail, with 29% saying we are "not close" and 47% thinking we will "close but miss" the target. Only 8% are confident the target will be met, while 15% remain uncertain, reflecting doubts about policy implementation.

The [Energy Institute's Energy Barometer 2024: UK Power Shift](#) also highlights a growing delivery gap between policy ambition and actual progress towards UK's climate goals: "Only 15% of respondents believe the UK will meet or exceed its 2035 carbon emission reduction goal given the current policy measures. Confidence in reaching net zero by 2050 is lower, at just 4%."

While the data reveals a crisis of confidence, it also highlights where action is most urgently needed - and where leadership can make the greatest difference. This lack of belief in success is not just a reflection of current trends: it's a warning. If pessimism becomes the norm, it risks creating complacency. There is a risk in accepting failure as a given, because once we do, the urgency to act begins to fade.

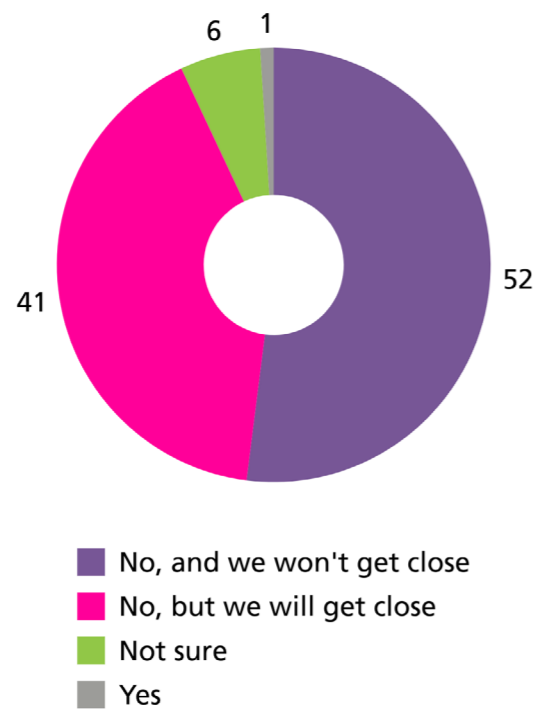
This is where the role of leadership becomes critical. The next generation of energy professionals must not only challenge the

status quo but also inspire belief in a better future. Confidence should not be perceived as naive optimism, but as a strategic asset fuelling momentum, attracting investment, and sustaining public support. As Christina Figueres, former Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC), said in her book *The Future We Choose*, "when your mind tells you that it is too late to make a difference, remember that every fraction of a degree of extra warming makes a big difference, and therefore any reduction in emissions lessens the burden on the future."

Will the world achieve universal access to energy by 2030?

Key message: The SDG7 energy access goal is viewed as the most unattainable major climate/energy target, with 9 in 10 professionals calling current efforts insufficient.

Will the world achieve universal access to energy by 2030?



This result is even more pessimistic than five years ago, when 11% of respondents to the Generation 2050 Manifesto survey believed the goal was within reach. This trend suggests growing frustration with the pace of progress and the perceived lack of political will and investment. The Energy Barometer 2024: UK Power Shift also highlighted that "many remain frustrated by the lack of coherent, long-term strategy," specifically from UK policymakers.

Since most of our responders agreed that climate change is a key reasons they joined the energy industry, this pessimism is not a sign of apathy. Instead, it reflects a generation that is deeply engaged, acutely aware of the stakes, and demanding more from global systems. The challenge now is to transform this frustration into fuel for action. The energy access gap is not a technical impossibility. It is a matter of prioritisation, investment, and inclusive policy whilst maintaining a focus on the goals for sustainable development. Pew's research results from 2021 also show that Gen Z and Millenials are more active than older generations addressing climate change on - and offline.

What are the first steps political leaders should take to tackle climate change and reach universal energy access?

Key message: Professionals demand policy teeth (laws + funding) over voluntary measures.

1	Enact legislation that limit emissions and expand energy access
2	Allocate funding to sustainable projects
3	Incentivise energy saving practices
4	Work with industry to align policies and understand needs
5	Fund R&D
6	Work with other countries on global initiatives
7	Build general awareness and knowledge

Our report finds that the top demands for change from political leaders are focused on enacting emissions laws, which hold the number one rank with a mode of 1. Funding sustainable projects comes in second, followed by incentivising energy savings in third place. Notable gaps include global cooperation (39% of responders ranked this sixth or seventh), which ranks only sixth, suggesting frustration with multilateral processes a pragmatic focus on local issues and potential a perceived limitation of global cooperation., while rResearch and development funding ranks fifth, indicating a preference for deployment of existing solutions over innovation.

Notably, recent global events (e.g., Iberian blackout, US election, and reports of Holistic Network Design (HND) rollbacks) may have influenced responders to reassess priorities, placing more emphasis on resilience and adaptability rather than long-term research and innovation global coordination. Responders may feel that global efforts are slow-moving, politically complex, or unevenly enforced.

These responses suggest that the time for soft commitments has passed. Current priorities reflect a desire for tangible, enforceable action. This is a similar result to the Manifesto, where 44% of respondents agreed that policy makers should focus on changing legislation and regulation (in the 25 Years Out survey, 41% of responders ranked 'Enact legislation that limit emission and expand energy access' first or second). But today's professionals are even more focused on implementation and accountability.

What are the first steps the energy industry should take to tackle climate change and reach universal energy access?

Key message: The industry is expected to lead with capital expenditures (deployed in technologies such as renewables) and corporate accountability.

1	Invest in and develop renewable energy
2	Ensure that business strategies and operations are in line with climate targets
3	Work with government bodies
4	Work with hard to abate sectors
5	Collaborate with local communities

When it comes to the energy industry's first steps, our report shows a desire for professionals to prioritise action over promises. The top rank is investing in renewables (55% responders ranked this first or second) and the second is aligning operations with climate targets (52% ranked this first or second). Working with governments ranks second. One surprising finding is that "collaborating with communities" ranks only fifth, suggesting that professionals are currently more focused on structural and systemic changes than on grassroots engagement.

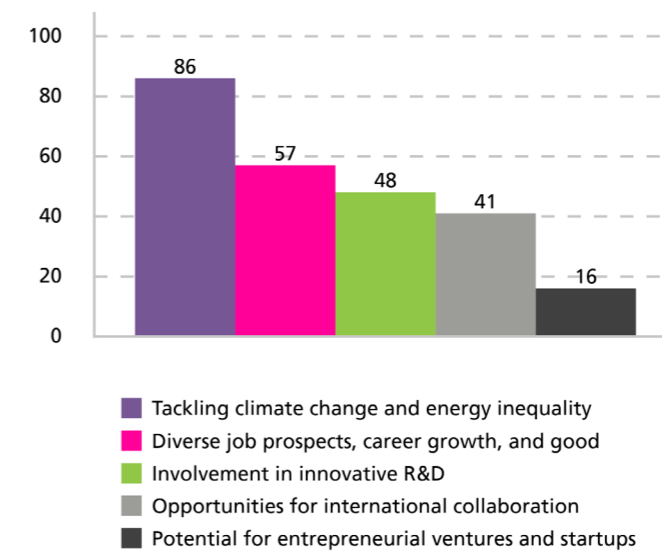
This is a similar result to the Manifesto, where 44% of respondents agreed that industry leaders should align business plans and commitments with climate targets and 35% agreed that industry should be investing in sustainable technology and infrastructure.

The energy industry has the capital, the talent, and the tools to lead the transition. What's needed now is the will and the courage to act decisively. By aligning operations with climate science and investing in scalable solutions, the industry can restore confidence in this sector and accelerate progress.

What are the top reasons you chose to work in/study energy?

Key message: The "climate generation" views energy work as a calling, not just a job – but needs economic stability too.

Reasons responders' chose to work in/study energy (%)



The energy workforce is largely purpose-driven, with 86% citing the desire to tackle climate change as their motivation-making it the dominant motivator across all sectors.

This marks a significant increase from the Generation 2050 Manifesto, where 59% (43% less) selected climate action as the key driver. Notably, the 25 Years Out survey included more renewable professionals. Climate change could be a bigger priority for renewables professionals, but equally this could be a reflection of more young people leaving oil and gas and turning to renewables.

But purpose is not the only factor. Career growth and financial stability were important to 57% of respondents, while 48% were drawn by opportunities in research and innovation. Sector-specific motivations also emerged: 88% of those in project management prioritise climate impact, 68% of engineers value career prospects, and 79% of entrepreneurs are motivated by the pursuit of innovation (participants were able to select more than one answer).

This data paints a picture of a generation that is mission-led but also pragmatic. This is a powerful signal to employers, educators, and policymakers:

If we want to attract and retain top talent in the energy sector, we must offer purpose, opportunity, and a clear connection between daily work and global impact. The energy industry is uniquely positioned to deliver on all three.

What are the most important skills and qualities needed by future energy leaders?

Key message: Early-career professionals crave hands-on experience and human connections over abstract initiatives.

1	Science behind energy production and distribution
2	Creativity and problem solving
3	Collaboration with diverse teams in a global context
4	Energy regulation and carbon policy
5	Communication
6	Digital skills and AI integration
7	Finance expertise
8	Personal commitment to sustainability

The energy transition will not be led by specialists alone. According to young professionals, the most effective future leaders will combine deep technical knowledge with broad, adaptive skills that allow them to collaborate, communicate, and innovate across disciplines and borders.

The top skills identified for future energy leaders reflect a balance between technical expertise and adaptability. Scientific knowledge and creativity/problem-solving are equally prioritised, highlighting that both technical mastery and innovative thinking are needed. Global collaboration ranks just behind, highlighting the importance of working effectively across borders in an interconnected energy landscape.

Digital and AI skills rank fourth, with a notable insight:

Only 30% of respondents feel proficient in digital and AI skills, pointing to a growing gap in digital capabilities within the workforce.

This is a call to invest in leadership development that goes beyond technical training. The leaders of tomorrow will be those who can connect the dots between science and society, between innovation and inclusion, and between ambition and action.

What are the most important tools/initiatives to support young professionals and future energy leaders?

Key message: Early-career professionals crave hands-on experience and human connections over abstract initiatives.

1	Internships and apprenticeships
2	Networking opportunities with leaders and peers
3	Mentorships
4	Scholarships and grants
5	Professional development courses
6	Innovation hubs and incubators
7	Diversity and inclusion initiatives

When asked what would best support young professionals growth, respondents overwhelmingly prioritised practical, real-world experience. Internships and apprenticeships ranked highest, followed closely by networking opportunities and mentorship. These top responses reflect a design to learn by doing and to learn from others.

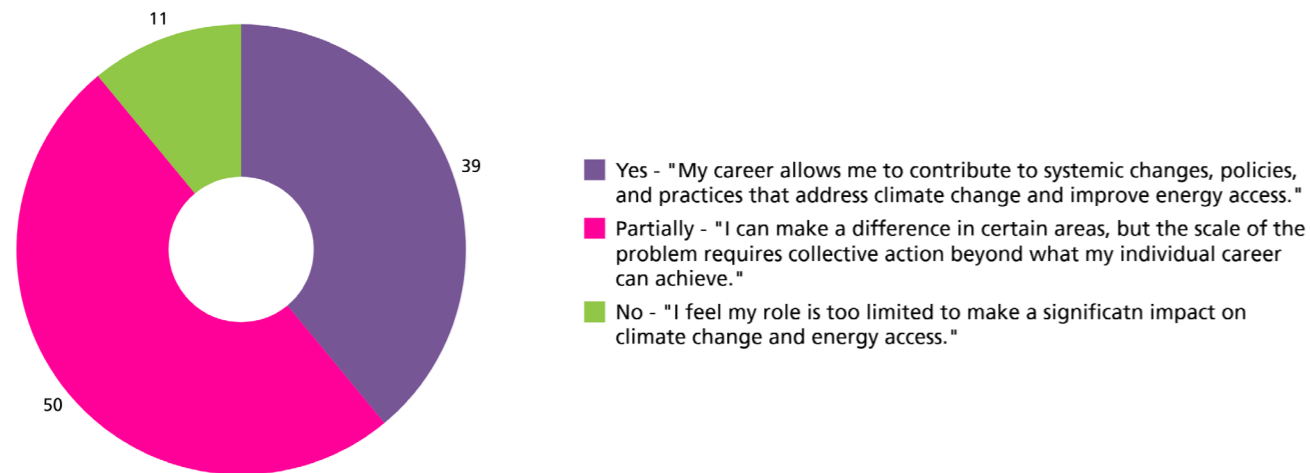
Interestingly, diversity programs rank only fifth. Follow up interviews revealed that young professionals see diversity and inclusion as a baseline expectation, not a standalone solution. They want to see inclusion embedded in every opportunity.



5. Handshakes between generations

Does your chosen career in energy give you increased agency in tackling climate change and energy access?

Key message: The industry is expected to lead with capital expenditures (deployed in technologies such as renewables) and corporate accountability.



Perceptions of career agency in the energy sector vary widely. Just 39% of professionals feel they actively drive systemic change, a view most common among those in policy and engineering roles. Half say they contribute but rely on broader collective action - a sentiment especially prevalent in consulting and project management. Meanwhile, 11% feel their roles are too limited to make a meaningful impact, with this view most common in support functions. A key paradox emerges: although 86% entered the field to combat climate change, only 39% feel truly empowered to do so.

This result reveals a generation driven by purpose, but uncertain about its power. And that uncertainty is a risk, because if young professionals don't see how their work connects to the bigger picture, we risk losing their energy and drive.

However, agency can be cultivated. Organisations can build it by making impact visible, creating feedback loops, and empowering decision-making. This is about building a culture of transparency and shared purpose. When people feel their work matters, they stay and they lead.

"We're here because we care. Help us make it count."



In this report, we will present a series of "handshakes between generations" interviews from Africa, Asia, Europe, and the Middle East, capturing diverse intergenerational perspectives. We will then present the Generation 2050 survey results that provide data-driven insights, highlighting common themes and regional differences across generations.

EUROPE: Shared responsibility and strategic continuity (Nicolas Manea, NESO speaks to Fintan Slye FEI, NESO)

Building Europe's energy future through collaboration, planning, and generational leadership

The future of Europe's energy sector depends on collaboration and the passing of knowledge and responsibility between generations of energy professionals. In my recent conversation with Fintan Slye, the National Electricity System Operator's CEO and a Fellow of the Energy Institute, we explored Europe's intergenerational challenges on its path to Net Zero. Our conversation concluded with a clear vision: while young energy professionals will inherit many of the challenges of decarbonisation, we stand ready to build upon the foundations laid by the current senior energy leaders.



Building Europe's energy future is a shared responsibility

When asked about Europe's most pressing energy challenges, Fintan identified two fundamental issues. "First, there's definitely an infrastructure challenge - how do we deploy the people and the capital to build the new renewable resources we need? Whether that's wind farms, solar farms, floating offshore, or the hydrogen economy, it's a huge investment opportunity," he explained.

Europe's interconnected grid - with its cross-border interconnectors and synchronised operations - stands as both a defining strength and a complex challenge. The continent's unique approach to building a well-connected power network allows countries to share in the benefits of the energy transition, reducing the need for each nation to invest in renewables at the same pace or scale. This collective advantage remains one of Europe's greatest strengths in the journey toward net zero.

Fintan also highlighted the importance of societal engagement: "There's also a societal challenge around how we bring people and societies with us. We're seeing some fracturing of the consensus around net zero, so we need to tell the story about why this transition matters - not just through climate change and sustainability, but through affordability and energy security."

This dual focus - accelerating infrastructure investment while strengthening public engagement - forms the first key element of the generational handshake shaping Europe's energy future.

Learning from the Past, Preparing for the Future

Reflecting on the evolution of climate policy, Fintan observed how climate action has moved from the margins to the mainstream of European political debate. "What you've seen is the narrative around climate change... has become central," he noted, pointing to the growth of renewables across the continent.

"Tackling climate change is absolutely the challenge of a generation... There are so many opportunities in the energy space."



Initiatives such as the UK's Clean Power 2030 (CP30) and Net Zero 2050 (NZ50) commitments demonstrate how far progress has come, while also underlining how much remains to be done. Fintan summarised this by saying: "We have largely done as much as can be with the existing grid... to get to the next level, there is a very significant investment in infrastructure required."

This captures the essence of the generational transition: earlier generations established the vision and frameworks, while the next must deliver large-scale implementation across Europe.

Essential Skills for the Transition

The discussion also explored the skills required for this generational handoff. Fintan stressed the enduring value of technical problem-solving while also emphasising that "the ability to bring people with you," securing societal buy-in, has become increasingly important.

The complexity of the energy sector requires both deep technical knowledge - spanning grid engineering, renewable technologies, and investment - and strong communication skills to align diverse stakeholders. As Fintan noted, "energy has gone right up the agenda" politically across Europe, underscoring why these skills are more vital than ever.

Emerging energy professionals must therefore be prepared to operate in a high-visibility, high-stakes environment where decisions impact every citizen.

A Handshake for Europe's Energy Future

In closing, Fintan offered advice for the next generation: "Tackling climate change is absolutely the challenge of a generation..."

There are so many opportunities in the energy space."

The task now is to take the strategic direction established by Fintan's generation and turn it into reality-ensuring that electricity, "because it's at the heart of the economy," continues to drive European prosperity throughout the transition.

This embodies the idea of a generational handshake for Europe: experienced leaders provide vision and frameworks, while emerging professionals bring new perspectives and implementation capacity. Together, across borders and across generations, Europe can deliver on its clean energy promise.

The energy transition will span decades, requiring continuity of effort and knowledge. Through intergenerational dialogue, responsibility and optimism are passed forward - ensuring that Europe remains on track to achieve its ambitious climate goals. This handshake between generations is one of the most critical connections in securing Europe's sustainable future.

About the Author

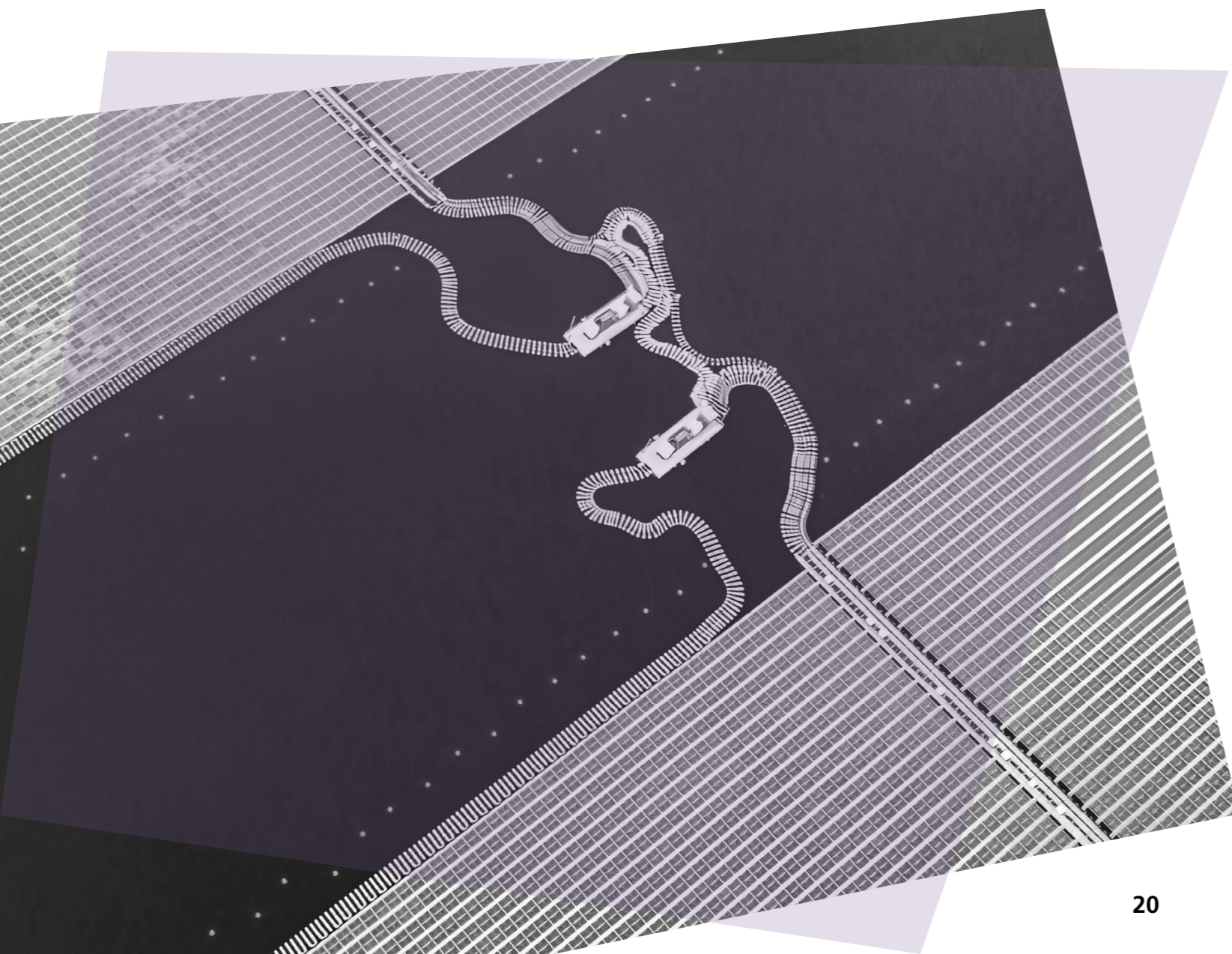
Dr. Nicolas Manea is a Distributed Flexibility Strategy Lead at NESO, driving coordination between local and national electricity markets. He also chairs the Energy Institute's Young Professionals Network across South Wales and the South West. Prior to NESO, Nicolas advised on flexibility markets, subsea infrastructure, and energy transactions as a strategy consultant.



SOUTHEAST ASIA: System thinking and inclusive transition (Lisa Pardini, Ion Ventures speaks to Peter Godfrey FEI, MD APAC EI)

Navigating complexity and diversity with empathy, innovation, and regional resilience

The energy transition in Southeast Asia is a story of complexity, courage, and creativity. I recently connected with Peter Godfrey, Asia Pacific Managing Director of the Energy Institute and a long-standing energy expert whose career has spanned from the early days of the UK's North Sea oil and gas sector to founding his own decarbonisation company and supporting young energy professionals across Asia. We first met briefly at the Handshake Lunch during International Energy Week – an event that proved especially successful in bringing together YPN members and Fellows across generations and regions. Our conversation explored the region's paradoxes, lessons from the past, and the importance of systems thinking in navigating its future.



Balancing the energy trilemma in a region of contrasts

Southeast Asia is a region of contradictions: rapidly growing energy demand driven by industrialisation and urbanisation, youthful populations with rising expectations, and ambitious national energy transition goals. Yet, despite this momentum, the region remains deeply tethered to fossil fuels – especially coal and gas. Peter describes the central challenge as a balancing act between energy security, affordability, and sustainability across highly diverse communities, both in terms of geography and income.

“The overriding challenge,” Peter says, “is to reconcile the urgent need for decarbonisation with the realities of unequal access,

Learning from the past to build a smarter future

Reflecting on the past 25 years, Peter sees remarkable transformation. Electrification has expanded rapidly, with countries like Vietnam and Indonesia making significant progress. The liberalisation of power markets, particularly in Singapore, has improved transparency and competition, even though state-owned utilities still dominate elsewhere.

Key milestones include the explosive growth of solar PV, particularly Vietnam's solar boom in the late 2010s, and the emergence of regional energy trading. The Statistical Review of World Energy 2025 shows that Southeast Asia as a region has seen rapid solar PV growth, but Vietnam stands out as the clear leader. Vietnam's solar PV capacity grew by more than 3,700 times in just 10

years (from 5 MW in 2014 to 18,667 MW in 2024). ageing infrastructure, and the persistent dominance of fossil fuels in many energy systems.” Encouraging developments such as the ASEAN Power Grid initiative, growing renewable investment, and early steps toward carbon capture and green hydrogen provide reasons for optimism. But hurdles remain – chiefly regulatory fragmentation, financing gaps, underdeveloped carbon markets, and the persistent need for knowledge and technology transfer.

He notes the importance of regional interconnectivity and urges decision-makers to invest more effort into cross-border solutions: “Climate challenges don't respect borders, and neither should our answers.”

But more subtly, there has been a profound shift in the language and thinking around energy. “We've moved beyond isolated projects,” Peter observes, “and now seriously talk about just transitions, circular economies, and integrated regional planning.”

Yet, he warns against complacency. “Progress is rarely linear. It comes in fits and starts. What matters is persistence and the willingness to keep learning and adjusting course.” This applies not only to infrastructure and markets but also to how professionals approach problem-solving in an interconnected, fast-evolving sector.

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A generational mandate for change

As a veteran of both the UK and Southeast Asia's evolving energy landscape, Peter sees a clear mission for his generation: to help deliver a just and inclusive transition.

This means more than simply swapping out fuels. "We need to fundamentally rethink the commodities we use and the infrastructure we build," he says. Energy access, workforce transformation, and social equity must be prioritised alongside decarbonisation. "The systems we pass down should not only be cleaner but more resilient, more collaborative, and more adaptable."

Looking ahead, Peter identifies five priorities for the next generation of energy professionals:

- Scaling up renewables and investing in smarter, more resilient grids
- Embracing circular economy principles and resource efficiency
- Developing a skilled workforce equipped for the green economy
- Engaging communities meaningfully in the transition
- Unlocking private capital for sustainable infrastructure

Crucially, he emphasises that technical ability must be matched by empathy and curiosity. "No one has all the answers," he says, "but together, we can find the pathways we need."

Systems thinking: from smart cities to regional resilience

Peter is a passionate advocate of systems thinking – a discipline that, in his view, is essential for anyone hoping to succeed in today's energy world. "The transitions we face aren't linear," he explains. "They are shaped by national context, social dynamics, economic structures, and institutional capacity. We must stop thinking in silos."

The Energy Institute and other institutions are uniquely positioned to embed systems thinking as a core professional competency – through their convening power, training programmes, and cross-sectoral reach. "It's no longer enough to be a specialist. We need people who can work across domains, understand ripple effects, and see the full picture."

In Southeast Asia, creativity often lies not in inventing new technologies but in integrating existing ones effectively. He cites the example of Jurong Island in Singapore – a reclaimed industrial hub that exemplified forward-thinking infrastructure planning in

the 1980s. More recently, Singapore's Tengah "Forest Town" shows how urban planning and smart energy can come together to create sustainable, liveable environments.

"Innovation here often takes the form of rethinking how technologies and policies intersect," Peter says. "It's about integrating solutions in ways that are locally meaningful."

In navigating regional and global dynamics, Peter also reflects on how Southeast Asia remains strategically positioned to engage with a wide range of global partners. Rather than aligning with any single geopolitical bloc, the region's energy future is likely to be defined by its ability to maintain open channels for capital, knowledge, and technology. This delicate balancing act is increasingly reinforced by a push for regional integration and localised supply chains – not only for reasons of efficiency and sustainability but as a resilience strategy in a shifting global landscape.

"The most powerful breakthroughs often come from unexpected places – from fresh perspectives, from younger voices, or from asking the 'stupid' questions."



Mentorship, empathy, and emerging leadership

Our exchange – sparked by a simple handshake and a shared interest in bridging generations – left me reflecting on the value of mentorship and openness in the energy transition.

“I’ve been fortunate to have outstanding mentors,” Peter shares, “but the best relationships weren’t top-down. They were partnerships – spaces where both could learn from each other.” He believes the energy transition needs this same spirit of openness across generations and disciplines. “The most powerful breakthroughs often come from unexpected places – from fresh perspectives, from younger voices, or from asking the ‘stupid’ questions.”

His reflections struck a particular chord. Through my own involvement in energy development and volunteering with the Energy Institute, I’ve come to value how mentorship can sharpen not only our technical understanding but also our broader purpose in this sector.

Yet, the path forward is rarely straightforward. That’s where systems thinking proves essential – not as a theoretical tool, but as a mindset that encourages adaptability, cross-sector collaboration, and a deeper appreciation for local context. Empathy, too, becomes a leadership asset in an increasingly interconnected world. As we begin to take on more responsibility, the challenge will be to lead with both ambition and awareness, learning not only from experience but from each other.

Peter’s parting words offer a powerful reminder: “Be bold, but stay grounded. Find your ‘why’ – your purpose – and let that guide you. And always make space

for others at the table. Because the energy transition isn’t about who knows more. It’s about who’s willing to work together to build something better.”

About the Author

Lisa is an energy solutions specialist at Ion Ventures with advanced expertise in battery energy storage, solar PV, and wind energy, focused on innovative decarbonisation of island systems and co-location of renewable assets in Southeast Asia. She has driven the development of renewable energy projects across the Philippines, Bangladesh, and India, applying sophisticated techno-economic modelling and policy advocacy to deliver scalable low-carbon solutions. A finalist in the 2024 Energy Storage Investment Awards, Lisa brings both technical rigour and strategic vision to the clean energy sector. Beyond project work, Lisa served as Honorary Secretary for the Energy Institute’s London Young Professionals Network and Coordinator for the European Youth Energy Forum 2025, leading initiatives to foster community and knowledge sharing among young professionals and emerging energy leaders.



Latin America: Diversity, opportunity, and the path to net zero (Karolina Zieba, Carbon Trust, speak to Ieda Gomes Yell, FEI and MIOD)

Harnessing regional strengths and overcoming persistent challenges through innovation and leadership

South and Central America stands at a crossroads in its energy journey - a continent rich in abundant natural resources, yet facing persistent challenges in energy access, economic stability, and the urgent need for decarbonisation. In my recent conversation with Ieda Gomes Yell, a leading energy expert and advocate for sustainable development, we explored the unique opportunities and hurdles facing South and Central America as it prepares to host COP30 in Brazil and accelerate its progress toward net zero.

Ieda began by highlighting the region’s diversity: “South and Central America is incredibly varied. Some countries have made strong net zero commitments, while others

are taking different paths based on their unique resource mix and economic realities. Brazil, for example, has a very green electricity matrix - 83% of its generation in 2024 came from renewables like hydro, solar PV, onshore wind, and some biomass. In drier years, this can drop, but the commitment remains strong. Chile has invested massively in solar and wind, while Argentina, despite its economic challenges, is catching up on renewables but still relies heavily on natural gas and biomass. Colombia’s electricity is mostly hydro and gas, but recent policy shifts have created new import dependencies. The Caribbean, meanwhile, still relies on diesel and LNG imports.”



She continued: "Every country is at a different stage, but all are committed to reducing CO₂ emissions using the resources they have. Brazil, for instance, is pushing ethanol and biodiesel in transport, with mandates to increase their share in fuel mixes. There's also a big push for biogas and bioethane. However, emissions from agriculture and deforestation remain massive challenges - Brazil is a major exporter and uses a lot of fertilisers. Containing deforestation and making agriculture more efficient are critical."

Ieda also noted the rapid evolution of renewables: "Ten years ago, solar PV and onshore wind barely existed here. Now, renewables are growing like crazy. The sector keeps evolving, and there's huge excitement about offshore wind, though Brazil is still waiting for its first auction."

As we discussed the upcoming COP30 in Brazil, Ieda emphasised the significance of the event:

"Hosting COP30 is a unique opportunity for the continent to showcase its progress and leadership in the energy transition. It's a chance for South and Central America to demonstrate how diverse approaches can contribute to global net zero goals, and to highlight the innovative solutions emerging from the region."

"Future leaders need to be comfortable with data, analytics, and digital tools, and be able to leverage them to drive innovation and efficiency."

Reflecting on the past: progress and persistent challenges

Looking back, Ieda reflected on the region's transformation: "South and Central America has always struggled with poverty and affordability. Electricity systems are more widespread now, but not always affordable. The big challenge is developing a comprehensive, affordable energy system without relying on subsidies, which can discourage private investment and create a snowball effect. Dispatchable electricity is a new concept here, and making it affordable is tough. Green molecules - like biofuels - are easier to produce, but scaling them up is another story."

She added: "Replacing diesel and petrol in heavy transport is a major hurdle, especially since we don't have the extensive rail networks you see in Europe. Electrifying buses and cars is a start, but biodiesel production also requires land, which can compete with food and forests."

Ieda shared her perspective on the evolution of the energy industry since the start of her career: "When I began working in energy, the sector was much less developed. There was a lot of poverty, and electricity was a luxury in many places. Over the years, we've seen significant expansion of the grid, but affordability remains a challenge. The introduction of renewables has been transformative, but the transition is far from complete. One of the biggest changes has been the growing awareness of the need for sustainability and the shift toward cleaner energy sources."

She also reflected on the drivers behind these changes: "Global climate agreements, technological innovation, and the increasing urgency of environmental issues have all played a role. The rise of solar and wind power, the development of biofuels, and the push for energy efficiency have reshaped the industry. However, economic instability and political uncertainty continue to pose challenges, especially in countries like Argentina and Venezuela."



Looking ahead: predictions and challenges

When asked about the future, Ieda was both optimistic and realistic: "Lowering the cost of dispatchable electricity is essential. Grid challenges are similar to the UK - renewables are concentrated in the north and east, but demand is in the south and east. Land availability will become a big issue, even though these countries are large - there are forests and mountains to consider. Nuclear could play a bigger role, but progress is slow; Brazil's third nuclear plant has taken years to complete. There's also huge potential for green hydrogen from wind and solar, but costs and intermittency remain barriers."

She elaborated on the importance of innovation: "The energy sector in South and Central America is constantly evolving. We're seeing new technologies, new business models, and new approaches to financing and project development."

The challenge is to ensure that these innovations are accessible and affordable for all. Collaboration between governments, industry, and communities will be key to overcoming barriers and driving progress."

Ieda also discussed the role of policy and regulation: "Effective policies and strong regulatory frameworks are essential for attracting investment and supporting the growth of renewables. Governments need to create stable environments that encourage private sector participation and facilitate the deployment of new technologies. At the same time, they must address social and environmental concerns, ensuring that the benefits of the energy transition are shared equitably."

Essential skills for the future

Ieda emphasised two key areas for future energy professionals: "First, we still need lots of engineers who understand energy production processes - if we're going to electrify the economy, this expertise is vital. Second, commercialisation is crucial: business development, financing, construction, contract negotiation, and bringing projects to market. And of course, AI is here to stay. Digitalisation and AI systems will be essential for optimisation and efficiency, both for companies and their customers."

She added: "The energy transition requires a multidisciplinary approach. Technical skills are important, but so are communication, leadership, and the ability to work across

Final reflections: energy as the foundation of prosperity

Ieda closed with a powerful message: "Energy is essential for people's wellbeing and prosperity. It keeps us comfortable, powers technology, and underpins modern society. The sector is incredibly varied and not limited to a single niche. Without energy, people cannot prosper. My advice to the next generation is to think about how you can improve tomorrow's systems - make them more decentralised, more efficient, and consider the role of critical minerals. There are so many angles to explore."

She concluded: "Don't be afraid to challenge the status quo. The energy sector is full of opportunities for those who are willing to innovate and take risks. Stay curious, stay committed, and remember that your work has the power to shape the future. The energy transition is not just about technology - it's about people, communities, and the planet. Make sure your efforts contribute to a more sustainable, equitable, and prosperous world."

cultures and sectors. Young professionals need to be adaptable, curious, and willing to learn. They should seek out opportunities for mentorship and hands-on experience, and be proactive in building their networks." Ieda also highlighted the importance of digital skills: "AI and digitalisation are transforming the energy sector. From optimising operations to improving customer service, these technologies are creating new opportunities and challenges. Future leaders need to be comfortable with data, analytics, and digital tools, and be able to leverage them to drive innovation and efficiency."

About the Author

Karolina works to accelerate the transition to a decarbonised energy future, specialising in offshore wind (OSW) and submarine power cables. In addition to volunteering with the Energy Institute, Karolina works for the Carbon Trust, where she collaborates with OSW developers overseeing the successful delivery of innovation projects. Prior to the work with Carbon Trust, Karolina worked as part of the policy and research team at Mainstream Renewable Power, a pureplay renewables developer.



AFRICA (AbdulHameed Raji, ARUP, speaks to Osten Olorunsola FEI, Board Member of several Energy firms (fill in board/director role of company))

Bridging energy gaps through solar expansion, digitalisation, and generational collaboration

Africa's energy story is one of contrasts reflecting abundant natural resources alongside widespread energy poverty, rapid technological innovation against persistent infrastructure gaps. In my recent conversation with Osten, an experienced leader and retired energy executive, we explored these paradoxes and how the continent's next generation of energy professionals can bridge them. Our exchange highlighted Africa's unique challenges: access, affordability, and reliability while also revealing the transformative role of solar power, off-grid solutions, and digitalisation in shaping the future. Above all, it underscored the critical importance of collaboration, mentoring, and leadership as Africa prepares its generational handshake for the energy transition.

Access, affordability, and reliability: Africa's core energy hurdles

When asked about the most pressing challenges, Osten did not hesitate: "There are four major challenges: access, affordability, reliability, and sustainability." Today, about 40% of Africans lack regular electricity, with sharp regional disparities: North Africa enjoys over 90% access, followed by Southern Africa with around 75-80%, East Africa mid-way with 50% access, while West and Central Africa remain far below 50%. Even where power is technically available, affordability often makes it out of reach, and reliability is another persistent issue. As Osten explained, "In places like Nigeria, consistent electricity is rare. Affordability is closely linked because if energy isn't affordable, it's as good as unavailable."

This reality is made even more complex by Africa's fragmented infrastructure. Poor connectivity both in transport and in energy systems limits efficiency and regional collaboration. Paradoxically, some regions export energy to Europe while local communities remain in the dark. For Osten, the solution lies in a more deliberate effort to build sustainable systems that meet Africa's own needs before servicing external ones. Most importantly, solutions must be tailored to Africa's five regions due to differing levels of development and access.

Solar Expansion and Off-Grid Innovation: Transformations Over 25 Years

Reflecting on change, Osten highlighted both progress and persistent gaps. Over the past quarter century, awareness of energy's role in development has grown significantly. "People now understand that energy is essential for economic progress," he observed. This shift has driven both policy action and technological uptake.

Solar energy, in particular, has become transformative. In rural areas where extending transmission lines is uneconomical, solar whether off-grid or in mini-grid form has expanded rapidly. Domestic gas use is also rising, both in power generation and transport, supported by compressed natural gas (CNG) incentives. These shifts reflect a pragmatic recognition that Africa cannot wait for grid expansion alone. Instead, it is pioneering hybrid and decentralized solutions tailored to its realities.

At the same time, Sub-Saharan Africa has sought to "accelerate value capture" from fossil fuels before resources become stranded channelling revenues into diversification and renewable deployment. "It's about making sure resources work for us now," Osten noted, "while preparing for a cleaner future."

A generational mandate: electrification, digitalisation, and local value

Looking to the future, Osten described the need to build an entire ecosystem - not just a patchwork of projects. "Electrification of everything is a global trend, and Africa is moving in that direction," he explained. Digitalisation and automation will be key, with data-driven decision-making supporting both efficiency and transparency.

Perhaps most striking was his emphasis on local value addition. "Future generations must not just export raw materials. We need to domesticate as much as possible, refine petroleum and energy products locally, process minerals locally. That is how jobs are created, and value is retained in Africa." For Osten, this principle applies across the board whether fossil fuels, renewables, or critical minerals needed for clean technologies. It is a blueprint for economic empowerment and sustainable growth.

"Your assignment is to balance energy security with climate security. Technology will help, but the real task is ensuring justice and access for everybody."



Lessons in collaboration, leadership, and mentorship

As our discussion turned to professional development, Osten shared candid lessons. “The world is built on collaboration as no one person can deliver everything,” he said. He argued that while Africa has strong education systems, its challenge lies in deploying talent locally rather than losing it abroad. Technical expertise must be continuously sharpened, but soft skills are just as vital: “People skills, mentoring, leadership, and respect for shared goals make the difference.”

Energy as life: A generational handshake for Africa

When I asked what inspired his career, Osten’s answer was simple yet profound: “Energy is life. It drives prosperity, environmental health, and the economy.” Trained as a geologist, he found in energy a purpose that touches every aspect of society. For the next generation, his advice was equally straightforward but deeply challenging: “Your assignment is to balance energy security with climate security. Technology will help, but the real task is ensuring justice and access for everybody.”

This insight crystallises Africa’s generational handshake. Osten’s generation has laid the groundwork expanding awareness, championing solar and gas solutions, and building spaces for dialogue. The next generation must scale up electrification and digitalisation, add value locally, and ensure that no community is left behind.

As I reflected on our exchange, I was struck by the dual sense of urgency and possibility. Africa’s energy transition is not just about catching up with the rest of the world; it is

This is not just theory for him, it is practice. Osten teaches as a visiting lecturer, organises annual conferences on energy sustainability and gas safety like Energy Institute’s Energy Sustainability Conference in Nigeria every year, and actively mentors young professionals. Networking, he emphasized, is a “core tool in the energy business,” often unlocking opportunities and solutions through dialogue and shared experience. His own career has been enriched by these exchanges, which he believes the next generation should embrace with equal commitment.

about charting its own inclusive, sustainable, and resilient path. The baton is being passed with both caution and optimism and with the conviction that energy, truly, is life.

About the Author

AbdulHameed is known for his commitment to engineering and energy in the UK and globally. Besides being a Management Consultant in Arup’s Energy business, he is a Chartered Engineer and a Member of the Energy Institute. He currently sits on EI’s Young Professional Council and is the Founding/First Chair of the West Midlands Young Professional Network at EI.



MIDDLE EAST: Regional sensitivity and holistic leadership (Aine Murray speaks to Dr. Waddah Ghanem FEI)

For me, the Handshake interviews are a powerful symbol of the Energy Institute’s mission, bringing together experienced professionals and emerging leaders to exchange knowledge, build relationships, and foster mentorship. Learning from fellow Energy Institute members is vital to understanding the complexities of energy transitions and developing regionally relevant solutions. These conversations act as a bridge between generations, ensuring that the insights of today’s leaders inform the innovations of tomorrow.

I had the honour of interviewing Dr. Waddah S. Ghanem Al Hashmi, Honorary Chairman of the Energy Institute – Middle East. Dr. Waddah Ghanem has been actively involved with the Energy Institute since 2008 and was appointed Honorary Chairman of the Middle East branch in 2018.

He is the author and co-author of 12 internationally published books, covering topics in safety, sustainability, and governance. Beyond the Energy Institute, Dr. Ghanem serves as Chairman of the Advisory Board at the Board Directors Institute and Chairman of the Society of Scholars, further demonstrating his influence across industry and academia.

With over 27 years of experience in environmental engineering, health and safety, and governance, Dr. Ghanem is widely regarded as a thought leader in the energy sector, particularly in the Middle East.



From Ground Zero to Global Impact

When asked about his background, Dr. Ghanem shared how he began his career in the mid-1990s after graduating from Cardiff University with a degree in environmental engineering - a pioneering qualification at the time.

Dr Waddah Ghanem explained to me "I started off as a consultant ... and then joined Emirates National Oil Company (ENOC) during the early stages of their first refinery project. It was literally ground zero - we were just starting construction." He was deeply involved in HAZOP (Hazard and Operability) studies and risk assessments, helping to shape the safety culture from the ground up. After the refinery became operational, he moved to ENOC's head office, where he led the development of a comprehensive HSE function and started working on many different projects around the world.

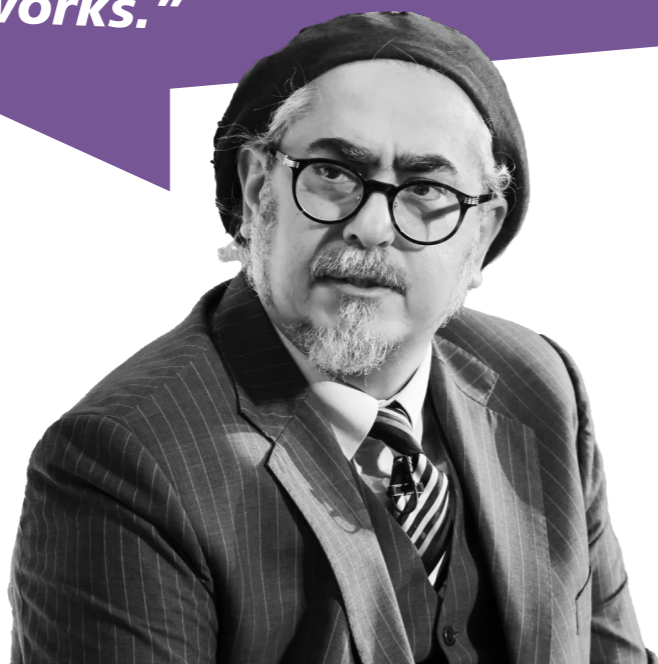
Exploring Energy Transitions with Regional Sensitivity

When I asked about the major challenges facing the energy sector today, Dr. Ghanem offered a valuable perspective on energy transitions. "The energy transition is not a one-size-fits-all process," he said. "You might have the same challenge, like capacity building in which an individual or organisations skills, knowledge and infrastructure are enhanced, in different regions, but the solutions need to be tailored."

He contrasted the UK's policy-driven approach, which uses tax incentives to support green energy, with the UAE's strategy of direct investment in education and workforce development.

"In the UK, you use tax levies but, in the United Arab Emirates (UAE), we don't have that kind of complex taxation."

"To become a good energy practitioner, you need a holistic understanding of how this world works."



This emphasis on regional sensitivity reflects broader Gulf strategies, where countries like Kuwait are reforming labour markets and integrating clean technologies into existing hydrocarbon systems rather than abandoning them outright. Dr Ghanem's insights underscore the importance of designing energy transitions that reflect local realities.

Understanding the Global Energy Workforce and Market Dynamics

Dr. Ghanem also reflected on the shifting labour dynamics and geopolitical influences shaping energy development. He pointed out that in the United Arab Emirates (UAE) nationals make up only around 15% of the population, meaning the energy sector - like many others - relies heavily on foreign labour. This creates a unique challenge in maintaining and growing the industry, especially as demand for skilled workers in renewables surges.

"We cannot upskill people fast enough," he noted. "The industry is getting competitive so quickly, especially in solar."

In contrast, the UK faces its own set of challenges. Dr. Ghanem highlighted how Brexit has significantly impacted the speed of construction, disrupting labour availability and project timelines. These examples underscore how labour markets and policy decisions directly affect the pace and success of energy transitions.

Oil Price Volatility and Investment in Renewables

Dr Ghanem also discussed the fluctuations in oil prices and their impact on capital expenditure for new projects. When oil prices are high, non-conventional renewables become more attractive. But when prices

fall, funding for both oil and gas and the transition itself can dry up.

"We needed enough money to come in from oil and gas to fund the transition," he explained. "There's now recognition among policymakers that it's not one energy transition, it's a sum of many transitions."

Recent data supports this view: a 1% rise in oil prices correlates with a 0.16% increase in renewable energy consumption, and in 2022, global investment in renewables reached \$495 billion- driven in part by the fossil fuel price volatility. These dynamics highlight the delicate balance between traditional energy revenues and the funding needed for future systems.

This idea, discussed at International Energy Week, highlights that each country is transitioning at its own pace, shaped by geopolitical, economic, technical, and commercial factors. Dr. Ghanem emphasized that understanding these layered transitions is essential for anyone working in the energy space.

Advice for the Next Generation of Energy Professionals

When asked what advice he would give to members of the Energy Institute's Young Professionals Network (YPN), Dr. Ghanem offered a compelling call to broaden their horizons:

"Today, to become a successful engineer, you need to have a broader understanding of everything around the world. You need to understand commercial aspects, macroeconomics - even politics."

6. Recommendations

He stressed that protectionist policies, shifting global alliances, and energy trade routes, such as the US exporting oil and gas to Europe, are reshaping the energy landscape. Countries reliant on manufacturing must ensure they invest equally in renewable energy to sustain growth.

“To become a good energy practitioner, you need a holistic understanding of how this world works.”

Dr. Ghanem acknowledged that this can be daunting for young professionals but encouraged them to stay informed and engaged. The complexity of today’s energy challenges demands not just technical expertise, but global awareness and strategic thinking.

Learning Globally, Acting Locally

He also spoke about the importance of learning from international experiences while resisting the urge to copy-paste solutions.

“I’ve seen consultants from Europe come in with ideas that worked in France or the UK, but they don’t always translate here. We need to understand the underpinning issues and build balanced, region-specific strategies.”

This message is especially relevant to the Energy Institute’s Generation 2050 initiative, which aims to empower young professionals to shape the future of energy. Dr. Ghanem’s insights remind us that innovation must be grounded in context, and leadership must be informed by both global knowledge and local realities.

Final Reflections

As our conversation wrapped up, I thanked Dr. Ghanem for his time and depth of

insight. I’ll be including his reflections in our upcoming publication, scheduled for release in late 2025.

“You’ve hit all my points,” I told him. “Your perspective is going to be incredibly valuable in the paper.”

Dr. Ghanem’s final thoughts reinforced the importance of regional understanding in global energy discourse:

“If you just try to copy and paste, it’s not going to work. One size doesn’t fit all.”

As we look toward 2050, the energy sector will be shaped by those who understand both global dynamics and local realities. Dr. Ghanem’s advice to broaden our horizons and think holistically is a call to action for the next generation of energy leaders.

About the Author

Aine Murray is a Principal Sustainability Engineer at Building Performance Prediction Ltd. With a strong focus on reducing the carbon impact of buildings, she has lodged over 3,000 Energy Performance Certificates for newly built homes. Aine is passionate about tackling fuel poverty and promoting sustainable design. She also hosts the Carbon Cli-mates podcast, which explores careers in energy, environment, and construction - aiming to inspire the next generation and stop the spread of solastalgia.



This report is not just a reflection - it’s a roadmap for action. The next steps are ours to take.

We - the Generation 2050 cohort - send a clear and urgent mandate to employers, educators, policymakers, and industry leaders. The data presented above showcases a generation that is urgent, pragmatic, and unwilling to wait. We are motivated by purpose, grounded in reality, and ready to lead. But we cannot do it alone.

There is hope embedded in these recommendations. The clarity of priorities shows that the next generation understands the scale of change needed and is prepared to drive it forward.

Recommendation	Pillar	Action owners	Action
Embed purpose into career pathways	Grow skills	Employers, HR, team managers	Clearly link roles to purpose-driven outcomes Reinforce purpose through onboarding, internal comms, and performance reviews
Invest in practical experience and mentorship	Empower leadership	Employers, industry associations, academic institutions	Expand internships, apprenticeships, and mentorship programs Prioritise access for underrepresented groups and early-career professionals
Close the digital skills gap	Grow skills	Training providers, universities, employers	Launch up-skilling initiatives in AI, data science, and digital tools Offer modular, accessible learning tailored to energy sector needs
Rebuild confidence through visible progress	Accelerate progress	Industry leaders, policymakers, communications teams	Communicate progress transparently and regularly Use storytelling and data to show how actions are making a difference

7. Energy Institute's role

Recommendation	Pillar	Action owners	Action
Prioritise policy and investment over pledges	Accelerate progress	Governments, regulators, and multilateral institutions	Enact enforceable legislation and allocate funding to sustainable projects Align national policies with international climate and energy access goals
Support T-shaped leadership development	Empower Leadership	Employers, leadership development organisations, professional bodies	Design programmes that combine technical depth with collaboration, communication, and system thinking Encourage cross-sector and cross-cultural learnings
Make inclusion structural, not symbolic	Ensure inclusivity	Employers, DEI officers, industry coalitions	Integrate inclusion into recruitment, development, and leadership pipelines Measure and report on outcomes, not just intentions
Create feedback loops for agency	Champion collaboration	Team leaders, HR, organisational designers	Build mechanisms for young professionals to contribute ideas and influence decisions Use innovation challenges, youth advisory panels, and reverse mentoring to elevate their voices

The energy transition will not succeed without the full engagement of its future leaders. These recommendations are a call to action for institutions to rise and meet them.

Confidence in the future begins with action in the present. By investing in skills, embedding purpose, and creating pathways to leadership, we can unlock the full potential of the Generation 2050 workforce.

The Generation 2050 findings are clear: to deliver the energy transition, we need purpose-driven careers, real-world experience, digital skills, inclusive leadership, and visible progress. These are not future ambitions; they are the Energy Institute's present mission. Through Generation 2050, we connect emerging leaders with mentors, equip them with T-shaped skills, and embed inclusivity into every opportunity. We break down silos, champion collaboration, and turn ambition into action. The EI isn't just aligned with these recommendations, we are already delivering them, ensuring today's young professionals have the tools, confidence, and community to lead the global energy transition.

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