

# SPE Review London



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The official e-magazine of the SPE London branch

## The Next Generation: Reflections from the 2025 SPE Women in Energy Seminar

- Q&A With 2026 SPE President Jennifer Miskimins
- Net Zero: Project Poseidon
- C-Level Talk: Zula Luvsandorj
- SPE London dinner with the SPE President
- Celebrating Arkwright success
- Introduction to upstream oil and gas in a net zero world (November 2025) – Tickets!
- Role of international oil companies in the net-zero emission energy transition, Part 2
- Get to know the SPE London Board 2025/26

Plus: News, SPE events, local and international



# SPE Review London

The official e-magazine of the Society of Petroleum Engineers' London branch

## ABOUT US

The Society of Petroleum Engineers (SPE) is a not-for-profit professional association whose members are engaged in energy resources, development and production. SPE is a non-profit professional society with more than 156,000 members in 154 countries, who participate in 203 sections and 383 student chapters. SPE's membership includes 72,000 student members. SPE is a key resource for technical knowledge related to the oil and gas exploration and production industry and provides services through its global events, publications, training courses and online resources at [www.spe.org](http://www.spe.org). SPE London section publishes SPE Review London, an online newsletter, 10 times a year, which is digitally sent to its 3000+ members. If you have read this issue and would like to join the SPE and receive your own copy of SPE Review London, as well as many other benefits – or you know a friend or colleague who would like to join – please visit [www.spe.org](http://www.spe.org) for an application form.

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# Behind the Scenes: SPE Review Editorial Board

**Elizaveta Poliakova, Editor in Chief**

Elizaveta is a Senior Petroleum Engineer at Trident Energy, now in Operations after 5.5 years in Subsurface. She holds an M.Sc. (Imperial College London) and a B.Sc. (University of Leeds), and has served SPE for 9+ years - President at Imperial and Leeds, Board of SPE YPs, and Chair of SPE London in 2022/23.

**Ffion Llwyd-Jones**

Ffion is a senior business editor and writer, with a BA Honours in Environmental Studies / Language, and a Business/Corporate Communications degree from York University in Toronto, Canada. She is also edX certified for ChatGPT.

Ffion has extensive writing and editing experience in the technology, health, automotive and environmental sectors.

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# Letter from the Chair



Dear SPE London members and colleagues,

As my final message in the SPE Review, I would like to thank you all for supporting me during the 2024–2025 year as Chair of SPE London. The past year has reinforced my belief in the importance of professional networks like SPE.

The theme for my year as Chair was 'The Energy Trilemma'. This relates to the complexities of balancing energy security, affordability, and sustainability. Looking back on the events in the UK over the past year, we can ask ourselves: are we in a better position to manage these concerns?

London remains a challenging environment for oil and gas professionals, with shifting public perception and policy pressures. However, our industry is stronger when we collaborate across engineering, finance, academia, and policy. Our Section is distinctive as a global city with a strong upstream presence, so I encourage every member to use SPE London as a platform for building those links in the UK and internationally.

SPE London has organised a wide range of valuable events in the past year relating to Net Zero topics, monthly educational talks, events for Young Professionals, talks at universities, and more. We have the SPE Review with its news and articles. We hosted the incoming SPE President, Jennifer Miskimins, and created a new event to give a warm SPE welcome to newcomers to London. Our full-day events continued this year, with the successful 'Women in Energy' seminar, and the annual 'Introduction to Upstream Oil & Gas for the Net Zero World' held last year and scheduled for this November.

Our section's board members received recognition this year from the wider SPE community. Congratulations to Phuc Truong for winning the 2025 Regional Service Award, and to Natan Battisti for winning both the Regional Young Professional Member Outstanding Service Award and the Giovanni Paccaloni Young Professional Service Award.

My thanks go to the Board and Committee Members whose commitment made possible every event, every newsletter, and every inter-society link. Thanks also to our sponsors, as their generosity allowed us the freedom to run the events. Most importantly, thank you to the London members for your engagement, ideas and support.

I have benefited greatly from my 26 years of membership and involvement with SPE. I encourage all of you to build your knowledge, career and your network by taking advantage of all that is offered by the SPE. That includes volunteering on our committees and letting us know if you have suggestions for improving any of our activities.

I would like to wish the new Board all the very best, especially incoming Chair Mehdi Alem. Let's continue working together to ensure SPE London continues to play its role in educating petroleum professionals and linking us to a global network.

Kind regards,  
**Adam Borushek**

SPE London Section Chair for 2024-25



# Letter from the Editor



Dear SPE London members,

We begin the new SPE year by welcoming our SPE London Board (**pp. 30–31**). Thank you to Adam Borushek for steady leadership as Past Chair, and welcome to Mehdi Alem as our new Chair. Please take a moment to meet the team behind the programmes and technical content you'll see this year – it's the team on these pages who make Section activity work!

We open this issue with a Q&A with 2026 SPE President Jennifer Miskimins (**pp. 8–12**) on how 'Solutions. People. Energy.' translates into real support for our technical community within the Society. We also share highlights from Jennifer's visit with our Section (**p. 16**), capturing discussions that matter for SPE London: engagement, measurable impact, and early sharing of results.

On **p. 14**, our C-Level Talk features Zula Luvsandorj – former Project Finance Advisor at the UK Cabinet Office's Infrastructure and Projects Authority, where she contributed to flagship initiatives including the UK's 5 GW blue hydrogen strategy, large-scale wind, EV charging infrastructure, and Hinkley Point – and current Advisor to the Deputy Prime Minister of Mongolia.

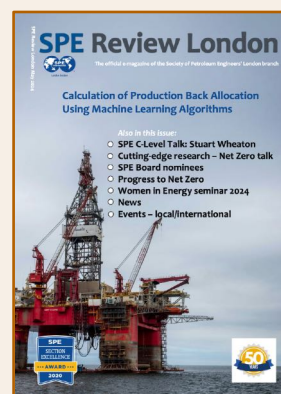
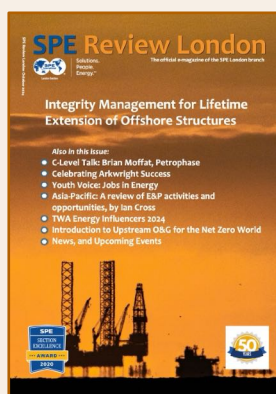
On **pp. 17–20**, we reflect on the Women in Energy event, bringing our network together and discussing what makes initiatives effective. We also continue our annual Introduction to Upstream in a Net-Zero World (**p. 21**), a concise, cross-disciplinary primer to oil and gas - join us for a guided tour of the upstream cycle! See **p. 22** for our Arkwright Engineering Scholars and graduates celebration.

On pages **23–29**, you will find The Role of IOCs in the Net-Zero Transition, part two of the trilogy.

Finally, thank you to our contributors and volunteers who keep this publication useful and relevant. Share ideas, case studies, and "how-we-did-it" notes for upcoming issues.

A special thank you to our editor, Ffion Llwyd-Jones, whose fresh ideas and great energy shaped this issue from start to finish!

Sincerely yours,  
**Elizaveta**



# NEWS DIGEST... NEWS DIGEST... NEWS DIGEST



## Serica Energy to buy Prax Upstream

In a deal worth more than \$25 million, Serica Energy is to buy Prax Upstream from its parent Prax Exploration & Production.

Prax Upstream is the sole operator of the Lancaster oilfield in the North Sea. Included in the purchase is the acquisition of a 5.21 per cent interest in the Golden Eagle Area, a 10 per cent interest in Catcher Field and a 40 per cent operated interest in the Greater Laggan Area. All are based in the North Sea.

Serica added that it expects an additional \$50 million of free cash flow from the combined assets in 2026.

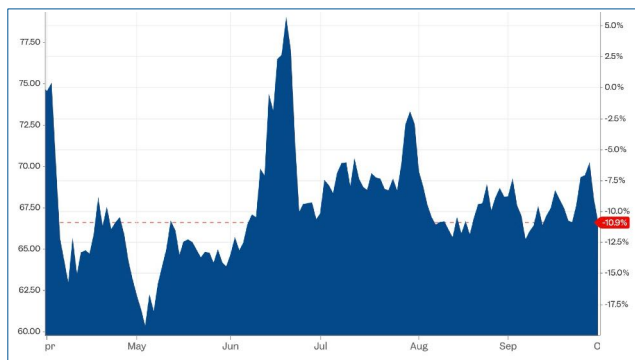
[Read more](#)

## ExxonMobil Guyana expands capacity

ExxonMobil's Hammerhead development offshore Guyana, the seventh project on the Stabroek block, is anticipated to come online in 2029.

The development will utilize a floating production storage and offloading (FPSO) vessel with a capacity to produce approximately 150,000 barrels of oil per day. The US\$6.8 billion Hammerhead project will include 18 production and injection wells.

[Read more](#)



Oil (Brent) 66.57 (-1.40) (-2.06%) 30.09.2025  
(Credit: [Business Insider](#))

## bp approves Tiber-Guadalupe oil development hub in US Gulf

bp has taken FID on the Tiber-Guadalupe project, marking its second offshore platform approval in the US Gulf in two years.

The development includes a new floating platform capable of producing 80,000 b/d of oil. Production is expected to begin in 2030.

bp plc's Tiber-Guadalupe project is its seventh operated oil and gas hub in the Gulf of Mexico

[Read more](#)

## Wildcat Petroleum's new appointment.

The energy company has appointed Trond Christoffersen as an independent non-executive director with effect from 26 August.

Christoffersen has more than 30 years' experience in the energy sector, working on geophysical and exploration projects globally in senior positions.

## Hopeful of final decision

Rockhopper Exploration is hopeful of a final investment decision this year on the landmark Sea Lion oil project in the Falkland Islands.

The UK company has a 35 per cent interest in the project with the Israeli operator Navitas Petroleum holding the remaining 65%.

Sea Lion has a significant best estimate resource of 730 million barrels to be developed in several phases.



Simon Thomson, Chairman, Rockhopper Exploration

# Q&A With 2026 SPE President Jennifer Miskimins: Energizing Tomorrow: Solutions. People. Energy.



As the 2026 President of the Society of Petroleum Engineers, Jennifer Miskimins is preparing to lead the organization through a year of transformation, outreach, and technical progress. With a longstanding commitment to both industry and academia, she brings a unique perspective to the role – only the third SPE president from academia and the sixth woman to hold the position. In this exclusive Q&A, Miskimins shares her roadmap for the year ahead, touching on key initiatives, the importance of member engagement, and how SPE can evolve to meet the changing needs of the energy sector.

[First published in JPT (Journal of Petroleum Engineering) in September 2025 from a talk with Pam Boschee. The full podcast is available [via this link](#).]

**PB: Jennifer, welcome and congratulations. Thank you for joining me today.**

JM: Thanks, Pam. It is indeed an honor to be sitting in this position today.

**PB: Let's go ahead and dive into some of your thoughts, as you'll soon be taking this role. First, what are the main goals for your presidency, and how do you hope to shape the future of SPE during your term?**

JM: This is always a good question, a good place to start off, isn't it? So, SPE has a new tagline, and some people might have heard it, others might not, but the new tagline for the Society of Petroleum Engineers is 'Solutions. People. Energy.' And obviously that's a little bit of a play on our name, but I think it does a really wonderful job of summarizing what SPE is all about.

We're a member-driven Society. We provide the world with energy needs, and we have the solutions to do so. Building on that, what I'd like to do is to help provide some ways to help our membership with the public perception of SPE and the good our industry does when it comes to providing energy and raising the standard of living worldwide.

I always like to take the opportunity at this point in time to point out that we are a not-for-profit organization, and we can't lobby. We're not here to lobby governments about what the oil and gas industry does and needs, and I think that's a really important thing for our members to realize. But I do believe we can do a better job of explaining to the general public the importance of what we do and to advocate for ourselves.

I hope, through some of my conversations with our members and other communications, that I can help to provide people with some tools to help with this public perception. We provide these solutions for energy needs, and the general public should understand that and the critical importance of such. Turning to the people side of Solutions. People. Energy. I want to work on providing people the opportunity and desire to engage in SPE at all stages of their careers, whatever level that is.



Jennifer with Prof Roberto Aguilera and students at the SPE Canadian Energy Technology Conference and Exhibition

We're still talking about the 'new normal' after the COVID-19 pandemic. That goes for professional societies also. Whether it's SPE or other professional societies, membership is unfortunately decreasing, and we need to make sure that all levels of SPE membership have an opportunity to contribute wherever their desire and passion is to help maintain our membership levels.

I think that goes especially for young professionals and students.







## Q&A With 2026 SPE President Jennifer Miskimins

Obviously, as an academic, I have a soft spot for students, but there are studies where people in that generation are showing less interest in professional societies. We need to make sure that they see a home for themselves in SPE and can help contribute to the future.

So, those are the philosophical areas. There are some more tactical areas that we're going to need to address also. Post-pandemic, SPE has been facing some significant budget issues, and my predecessors have been working very, very hard on that, along with the SPE Board of Directors. We're going to need to continue to do so. Another tactical area is we're at the point where we need to update our strategic plan. These areas that I mentioned—solutions, people, energy, and the budget—are really going to factor into the strategic plan. So, there's maybe a long answer to your question, but these are some of the things that I'm planning to focus on during my term.

**PB: I think just taking two items of what mentioned leads to my next question. What do you see as some of the challenges coming for SPE and the petroleum engineering profession in general? For example, you mentioned public perception. That has been identified as something that increasingly needs to be addressed in today's world, along with encouraging the further engagement of students. Could you explain a bit more about what other types of challenges you see?**

JM: When I look at the bigger picture of petroleum engineering, there has been, and obviously is, some concern with the reputation of the industry. I deal with this almost on a daily basis, and I think anybody that's working a petroleum engineering program or course of study is dealing with this when we look at recruiting students into the petroleum engineering discipline, or any of the disciplines that might be aligned with the petroleum industry.

I think we really need to start focusing more on being proud of what we do. Not shy away from the fact that we provide increasing standards of living for people around the globe by supplying energy and doing it in very clean and sustainable ways. This isn't something that SPE can solely do as an entity. I don't have any misconceptions about that, but I also believe that as individuals, we can help contribute to changing attitudes by providing some insight, and SPE can help provide the tools to do such.

The other challenge, and this is a big one, is the changing attitude about society memberships I mentioned earlier. We are seeing some decreases in membership enrollment with SPE. And again, SPE, and really any professional society, is seeing this change. Olivier Houzé, who's my immediate predecessor as the 2025



Meeting with Mr. Ahmed Jaber Al-Eidan, CEO of Kuwait Oil Company

President, has focused on showing some of the sharp drop-off we have with young professional membership. I'd like to continue to see us engage with the young professionals and see what we can do to help mitigate some of those issues and gain insights into why this attitude is changing about society memberships. And just make sure that everybody at all levels of SPE membership feels included and feels an opportunity to contribute to the Society and have SPE contribute to what they want to see also as a member. I don't think that we can fix all the problems, but we can sure start to chip away at some of these.

**PB: You have a few decades of experience behind you. I'm sure you have seen this evolution over the course of your career from, let's say when you began, of these views about the industry overall. Along with that, changes in what is considered important, especially from the perspective of today's young professionals, students, and their priorities. How do you think your experience in the industry, your role as a professor of petroleum engineering, and your extensive history as an SPE member have prepared you to become SPE president?**

JM: I kind of like this question. It's funny because my first response since being nominated, and it still holds true, is that I'm not really sure anything can completely prepare you for this role. I mean, it's so broad and worldwide and diversified. We all come with our different experiences and backgrounds and those drive how we see the world. I don't think anything, even with my varied background in industry and academics, can





## Q&A With 2026 SPE President Jennifer Miskimins



Serving on an SPE YP future leaders panel at ADNOC Research and Innovation Center moderated by Duaa Ibrahim

allow me to fully understand what everybody else's history or interests are. I may be a jack of all trades, master of none in the sense that I've been a student member, a professional member, worked in industry, and worked in academics. As my bio shows, I've been involved in a multitude of different areas with SPE. So, I hope it gives me a glance into the various areas that people have an interest in. That being said, I definitely want to put out there to people that if I'm not seeing something through their lens correctly, please reach out. Let me know. Let me know your thoughts. I'm here to learn and to serve.

I do have some thoughts, as we've discussed, about what I'd like to accomplish as president, but I'm obviously not a young professional anymore. I'm obviously not a student anymore. So, if there are things that I need my eyes opened to reach out to let me know. I think we're all here to make SPE a better place, and I'd like to see what we can do to drive that.

**PB: Okay, I'd like to now jump into some of the more technical aspects that affect our industry. What trends or emerging technologies do you think will most significantly impact our industry in the next few years?**

JM: This is a pretty long list, and it's very specific to some of the areas that people work in, but there are a couple that are universal. The first one, and this one was actually kind of easy to come up with, artificial intelligence (AI). AI is everywhere. And I don't think a lot of people, myself included, are completely aware of all the areas that it's really started to impact our industry, whether it's in the office or whether it's in the field. I mean anything from taking and summarizing meeting minutes to analyzing drone footage coming in from the field to see if there are leaks occurring.

I think we're just now scratching the surface of what that's going to do and how much more predictive it's going to become. That being said, I know there are a lot of people that are concerned about loss of positions, or AI taking over jobs entirely. I don't believe that's the case. It really is a tool that's going to help us understand things a little bit better and how we can improve what we do. Ideally it will help to eliminate many of the mundane tasks and allow us to be able to focus on being more creative and applying that creativity. I think we're going to see a lot of changes in this area in the next few years.

Another one that's pretty universal and we hear a lot about, is that decarbonization continues to be very high on the list. I hear this from potential students all the time. They hear that there's not a future in the industry, but when you talk with them, it's important to help them understand it's not going away. We're going to need to produce more gross amounts of oil and natural gas and energy in general in the future than we are even now. That's going to continue to be a challenge. Net zero doesn't mean zero production by any means, so that's offering a lot of opportunities too, right? We've got to do things better in the future than we have in the past, so I think that's going to continue to significantly impact our industry.

Something more regional, as we investigate unconventional reservoirs around the world will be water. Water conservation. You hear in the Permian Basin that water really is the new oil in the sense that it's driving the production and how many of the operations that are being conducted. I believe we're going to continue to see a lot of focus on that in the future. So, like I said, the list is long, but those are the top areas I see coming.

**PB: SPE has a very diverse membership, certainly in where its presence is, as well as our members range from very young, fresh out of college, and our students not yet out of college, up to our more experienced professionals. How do you see SPE's role evolving to meet the needs of both experienced and young members who may be entering the industry?**

JM: I don't necessarily like to read things during interviews, but I'm going to quote SPE's value proposition statement, which has come out in recent months. At SPE, 'we deliver solutions and empower people to drive the energy industry forward. SPE members gain access to premier programs, content, and events designed to



## Q&A With 2026 SPE President Jennifer Miskimins

accelerate professional growth and career development while fostering a strong network and sense of community. Our commitment is to ensure members receive exceptional service and support and relevant communications.'

In answer to your question, I believe this does a really good job of summarizing what SPE strives to bring to its members, no matter what their needs are or where they are in their careers. We can't be all things to all people. We can't do everything. There are budget constraints and other considerations, but we have to continue to listen to what our members want. Whether they're experienced professionals, whether they're YP's, whether they're students—and respond to those needs.



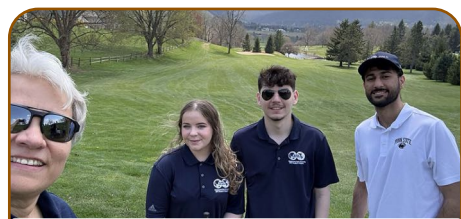
Jennifer with super SPE volunteers (L-R Mary Van Domelen, Jessica Iriarte, Jennifer Miskimins and Karen Olson)

As an example of how SPE has evolved, I was on the board of directors starting in 2015. At that time, we had around a dozen technical sections, if that many, and they were something relatively new. Now, 10 years later, we have 24. These were all started and driven by very passionate members with global interests in these particular areas.

That's an example of how SPE's has evolved to say, okay, we have these 24 areas. There's global interest in them. People are very, very passionate about them. By providing a platform and an opportunity to see where some of these interests lie, that's where SPE can really help connect people. And again, they are very member driven. Somebody has an idea, they have colleagues that want to drive those topics forward. It gives us a great opportunity to do that. SPE has done a pretty good job of evolving to do that at all levels of experience, and we hope to continue to do so.

**PB: You may have touched upon another point I wanted to ask you about in terms of our technical sections. Of course, we have a variety of geographical sections as well, and I think that also could help in further engaging young professionals. And what kind of other advice would you pass along to young professionals who are aspiring to make an impact in the sector?**

JM: I'm going to come back to a term I used a minute ago. If you have a passion, there's going to be a role for you. And you know, things are going to be rough at times, and our industry is cyclic. There's no doubt about that. But if there's one thing that I've noticed throughout my career in academics or the industry side of things ... if you're passionate, there's a role for you.



At the Penn State University golf tournament with SPE student section officers

My advice would be to let that passion guide you. Find others with similar interests, whether that's in a regional section for members or students in a chapter, or if it's technical sections, conferences, or regional meetings. Whatever it is, let that passion guide you. Find others that have similar interests and be willing to serve to drive them forward.

That's something that I'm going to twist a little bit. SPE can do a lot of things for its members, but the members also need to do some things for SPE. You'll find that some of the most rewarding and impactful contributions you can make are through a society like this. Might not come with a paycheck, but it does come with some really rewarding feelings and contributions that come out of it. In this case, the intangibles might be more important than the tangibles, and likewise, the intangibles can become very tangible benefits in the long run.

That's the kind of advice I give to young professionals or students if they want to make an impact. I think that leads to networking and leads to the ability to find mentors, both formal and informal. And those leads might lead to the next answer to a technical question, or the next job opportunities. So, find what you love and go for it.





## Q&A With 2026 SPE President Jennifer Miskimins

**PB: Can you share a professional challenge you faced and how it shaped your leadership approach? I think, given your remark about having that fire, that passion, it seems that certainly influenced how you may have found your way.**

JM: You're right. Many of the roles I've taken over time were because I've had a passion or an interest in finding out more about that particular area.

A professional challenge that I had? It's not a fun one, but it was a challenge. I was the department head of petroleum engineering at the Colorado School of Mines for about 6 months when the COVID-19 pandemic hit. And if there was something that maybe changed my leadership approach or helped shape what I do, it probably was that.

I've been a rule follower all my life. I think all my friends and colleagues would tell you that. But, what do you do when there are no rules? Right? We were all navigating something new. My job at that point in time was to make sure people remained safe and also try to make sure people continued to get the education that they needed. I think it shaped me to be more of a listener and to really hear people.

Going back to some of our earlier conversation, it was gaining understanding through somebody else's lens what they were dealing with under those circumstances. Understanding the importance of communication better and just how critical it is to listen and actually hear.

Anyone who has been in leadership roles deals with challenges, but if I had to pick one, that might be the biggest professional challenge I've ever had.

**PB: That's one worthy of a star or two. That's a big one. Is there anything else you'd like to add? Is there something that I didn't touch on that you would like to bring to the attention of our members?**

JM: I get asked this question a lot: Whether being SPE President is something I always wanted. I'm very upfront about that. No, it was never on my radar. It was something that came to me. As more and more people asked me about it, I started to consider it more seriously.

So no, it never was, but I promise to all the listeners and the readers that I am here now, and I'm going to give it the best I can and give the SPE membership everything that I have. I'm very much looking forward to the role and its challenges.

**PB: Thank you so much for sharing your insights, experiences, and a bit of your vision for the future of SPE in our industry. It's been a real pleasure speaking with you, and we're looking forward to seeing your leadership in action as you take the reins as president at ATCE.**



Jennifer with SPE North America Regional Director Kim Oracheski and YP and student attendees after a Completions 101 presentation

# Project Poseidon. The Leman CO<sub>2</sub> Injection Test

The London SPE Net Zero Gaia Committee recently held the first in-person event in 2025: Project Poseidon. The Leman CO<sub>2</sub> Injection Test – results and operational highlights.

Experts shared exclusive insights into the Leman gas field trial, the cutting-edge technologies used, and the vision for injection.

In March 2025, Perenco wrapped up the first carbon dioxide (CO<sub>2</sub>) injection test into a depleted natural gas reservoir, in the UK's southern North Sea, for CCS purposes. The test was conducted at the Leman field by the Project Poseidon Joint Venture, consisting of Perenco UK (operator), Carbon Catalyst, and Harbour Energy. The test involved delivering 15 injection cycles into the depleted Rotliegend Sandstone, mobilizing 11 CO<sub>2</sub> offshore batch refills. The program also saw acquisition of an exceptional dataset, was performed safely, without injection issues, and demonstrated that reuse of production assets is viable for Carbon Storage projects.

We want to give a big thank you to Marta Puig Alenya and Christopher Furby for their excellent presentations at the event. It was the first in our in-person series, and the content certainly didn't disappoint. Brilliant technical work and feeling very grateful that so much was shared. And of course big thanks to SLB / Gabriella Oliveira, Dan Knight and Emma Luke for hosting us.

Adam Borushek added: "Marta and Chris - thank you for talking us through the operations of Perenco's CO<sub>2</sub> injection test. To Max and the SLB team – thank you for organising an excellent event for SPE London."





# Energy transition: innovation and collaboration



Zula Luvsandorj is a Mongolian-born energy strategist and infrastructure finance expert with 15+ years of global experience and over \$20B in closed deals.

She currently advises Mongolia's Deputy Prime Minister on energy transition and investment strategy, helping to shape the country's path to a low-carbon future. A former Project Finance Advisor to the UK Government's Cabinet Office and The University of Oxford's Saïd Executive MBA alumni, Zula has led major energy deals across EMEA.

## Who is Zula Luvsandorj?

I was born and raised in Mongolia, and my career has been shaped by a desire to connect very different worlds. I studied philosophy at Charles University in Prague, before moving into finance in London where I spent more than a decade at SMBC working on major infrastructure and energy projects. I later completed an Executive MBA at the University of Oxford's Saïd Business School, which gave me a deeper perspective on leadership and international investment. Since then, I have held senior roles in both government and the private sector, from advising the UK Cabinet Office on clean energy strategy to supporting the Government of Mongolia on large-scale infrastructure. Today, my work focuses on accelerating the global energy transition by helping finance, policymakers, and emerging markets find common ground.

## How has your background in philosophy from Charles University influenced your approach to problem-solving in finance and policy?

Philosophy gave me a way of thinking that has been invaluable throughout my career. It trained me to question assumptions, examine problems from different perspectives, and avoid rushing to the most obvious answer. In finance and policy, problems are rarely linear. There are always competing priorities, political pressures, and financial risks. Having a philosophical framework helps me see the bigger picture while staying grounded in practical solutions.

## How did your decade-long experience with SMBC (structuring infrastructure and energy financing) shape your career direction?

My time at SMBC was formative. Working on large, complex projects such as nuclear, transport, and renewables showed me how critical financing structures are to making infrastructure viable. I saw first-hand the importance of risk allocation, investor confidence, and cross-border cooperation. That experience convinced me that the future of energy transition relies on more than technology alone, it

requires innovative financial frameworks and international collaboration to bring projects to life.

## You've worked across government and private sectors – from the UK Cabinet Office to the Government of Mongolia. How has shifting between these worlds shaped your approach to leadership?

Shifting between public and private roles has taught me that leadership is as much about translation as it is about direction. In government, you are accountable to the public and focused on long-term policy outcomes. In the private sector, market realities and shareholder expectations dominate. Bridging those two worlds requires empathy, adaptability, and the ability to align incentives. I have found that the most effective leaders are those who can create trust on both sides and build coalitions that drive real progress.

## Having worked on UK projects ranging from nuclear (Hinkley Point C) to EVs and offshore wind, what do you see as the most transformative initiative for the UK energy sector?

Offshore wind has already transformed the UK's energy landscape, not just in terms of scale but also in proving that clean energy can be competitive. However, the most transformative initiative still to come is system integration. The challenge now is to ensure that offshore wind, nuclear, EVs, hydrogen, and storage all work together with a grid that is resilient and future-proof. Integration will define the next stage of the UK's leadership in clean energy.

## How do you compare the UK's energy transition journey with those of other regions?

The UK has been ahead of many regions, particularly in offshore wind and emissions reduction commitments. Its Contracts for Difference model, for example, has been studied internationally as a way to scale renewables. However, the UK also faces challenges in long-term grid planning and balancing affordability with speed. In Europe, the Nordics have





## Energy transition: innovation and collaboration... continued

led on system integration, while in Asia manufacturing scale has driven down costs. The US benefits from deep capital markets and strong innovation ecosystems. Each region has its strengths, and the real opportunity lies in cross-regional learning and cooperation.

### Where do you think hydrogen realistically fits in the global energy mix by 2030?

Hydrogen is not a silver bullet, but it has a critical role to play. By 2030 I see hydrogen being used primarily in industrial clusters and heavy transport such as shipping and aviation. It is unlikely to compete directly with electrification in everyday energy use, but it will complement electricity in areas where alternatives are limited. The next five years will be about building the infrastructure and demand hubs that allow hydrogen to scale sustainably.

### What is the most effective way to accelerate private capital flows into clean energy projects?

Investors want clarity, consistency and credible risk-sharing mechanisms. The most effective way to


accelerate flows is to provide stable policy frameworks alongside blended finance that reduces early-stage risks. Public institutions can play a catalytic role by absorbing some of the initial uncertainty, making projects bankable for private investors. Standardisation is also key. If projects are structured in ways that global capital markets recognise and trust, money can move more quickly and at scale.

### What advice would you give to young professionals aiming to build a global career at the intersection of energy, finance, and policy?

Be curious, and do not be afraid to step outside your comfort zone. My own path from philosophy to finance and then into government was not linear, but each step gave me valuable tools.

Develop a strong technical foundation, but also invest in building relationships across cultures and sectors.

Energy transition is a global challenge that demands collaboration, so your ability to connect people and ideas will be just as important as your expertise.



## Call for Proposals

### Call for Proposals is closing soon

Do you want to lead a technical session at this upcoming symposium? The SPE Energy Transition Symposium Program Committee invites you to submit a paper proposal, for potential inclusion in the technical program.

[SUBMIT YOUR PAPER PROPOSAL](#)

The deadline to submit a paper proposal is **8 April 2025**.

### Paper Proposal Information

Please note that abstract submissions should be formatted into four (4) specific paragraphs:

- Objectives/Scope: Please list the objectives and/or scope of the proposed paper. (25-75 words)
- Methods, Procedures, Process: Briefly explain your overall approach, including your methods, procedures and process. (75-100 words)
- Results, Observations, Conclusions: Please describe the results, observations and conclusions of the proposed paper. (100-200 words)
- Novel/Additive Information: Please explain how this paper will present novel (new) or additive information to the existing body of literature that can be of benefit to and/or add to the state of knowledge in the petroleum industry. (25-75 words)

The following guidelines apply:

- DO NOT include title or author information in your abstract
- Word Minimum: 225
- Word Maximum: 450

## Delivering the message, enhancing the industry



The SPE London Section recently hosted Jennifer Miskims, SPE Global President at a welcome dinner in London. Attendees also included the SPE London Board and SPE London sponsors.

Discussions were wide-ranging, from the need to deliver the message that oil and gas is essential in people's everyday lives, to enhancing the status of the industry, and the importance of the SPE tagline: **'Solutions. People. Energy.'**

The Serica Energy video (*A Town Called Bruce*) about the Bruce Field was quoted as an example of how we can teach laypeople how oil and gas is so much part of their everyday lives and so many people depend on the industry. The film was made with Brindex and the GMB Union, to 'shed light on the hopes and fears of some of our colleagues who work on our Bruce platform. These stories have parallels on many other platforms and with many other families'. Find the article via this link: [https://vimeo.com/1010510808?login=true#\\_=\\_](https://vimeo.com/1010510808?login=true#_=_)



Another idea was making short videos showing how petroleum-based items are in use daily lives (such as how few items would be left in a kitchen if all such items were removed), or how wind turbines elements use petroleum.

Where education is concerned, there was a comment that some schools in the UK refuse to entertain oil and gas subjects for discussion, including not allowing parents to talk about it during parent evenings, or when children have a 'what my parents do for work' at school. Jennifer suggested we talk with SPE Aberdeen about how the section has been so successful getting into schools and discussing oil and gas topics.

Jennifer then commented that one of the challenges she wants to address is to convert SPE student members to full members. She believes it's vital to show young people how they can make a difference. Jennifer is a teacher, and talking with her students has led her to understand that while great salaries are important to the young generation, they also want to make a difference. She emphasise that the tagline 'Solutions. People. Energy.' is a critical factor in the strategic plan.



Ola Davies, Regional Activities Manager, Europe & Africa, with Farid Hadianman, SPE London Treasurer

The evening dinner was attended by Board members, sponsors, and, of course, Jennifer Miskims, SPE Global President, and Ola Davies, the Regional Activities Manager, Europe & Africa. SPE London Board members included Adam Borushek from RISC, Andrew Mynors from Geolog, Farid Hadianman from BP, Khaled Al Marei from Storegga, Yasir Mumtaz from SLB, Phuc Truong from Perenco and Shwan Dizayee from Accenture.

We were also delighted to welcome SPE London sponsors:

Ben Marsh from Rockflow Dynamics,  
Mehdi Bolourchifard from Serica Energy  
Patrick Jennings from Tullow Oil,  
Rhydian Williams from Sproule-ERCE,  
Rinat Gabdrakhmanov from Harbour Energy  
Liam O'Flynn from OPC.

Sproule  
ERCE

SERICAENERGY

Harbour  
Energy

OPC

TULLOW  
OIL

RFD  
Rock Flow Dynamics



# The Next Generation: Reflections from the 2025 SPE Women in Energy Seminar



On Thursday, 19 June 2025, the Society of Petroleum Engineers (SPE) London Section hosted its flagship Annual Women in Energy (WiE) Seminar at London South Bank University (LSBU).

Under the theme 'The Next Generation: Solutions. People. Energy.', the event brought together a vibrant and diverse community of professionals, students and industry leaders for a day of insight, empowerment, and connection.

Organised by the SPE London Women in Energy committee, the seminar was designed to inspire and equip attendees at all stages of their careers. The programme featured keynote speeches, a fireside chat, a panel session, seven interactive workshops, a masterclass, and a celebratory 'Kanpai' toast to close the day.

## Keynote highlights: Leadership with vision and authenticity

The day opened with two compelling keynote addresses that set the tone for the event.

**Amy Miller, CEO of Pragma**, delivered a powerful message on the importance of innovation and adaptability in the energy sector. Drawing on her experience leading a company founded to bring a pragmatic voice to the energy transition, Amy spoke about the need to embrace change, foster inclusive cultures and champion new ideas. Her address was both strategic and personal, offering attendees a clear vision of what leadership can look like in a rapidly evolving industry.

**Catherine Allsop, VP Subsurface at Equinor**, gave a deeply reflective and motivating talk. She spoke openly about her journey through both technical and leadership roles, highlighting the value of resilience, mentorship and staying true to one's values. What made her talk so powerful was how truthful, approachable and

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## The Next Generation... continued

relatable she was, even sharing how she still sometimes experiences 'imposter syndrome'.

However, her message was clear that those doubts are normal and shouldn't stop us from speaking up or going for that next role. Her authenticity resonated strongly with the audience, many of whom later described her talk on LinkedIn as "inspiring," "grounding" and "a masterclass in leadership with integrity".

### Fireside chat: Real talk, real impact

The fireside chat was an outstanding session, with a candid and engaging conversation between senior leaders **Nicki Adams, VP at BP**, and **Charlie Abrines, Group MD at The Energy Council**.

Topics ranged from navigating career transitions and managing 'imposter syndrome', to building influence and advocating for others. The informal format allowed for honest storytelling and practical advice, with many attendees praising the session for its relatability and emotional resonance.

One LinkedIn post captured the mood perfectly: "The fireside chat was a breath of fresh air – raw, real, and incredibly empowering. It reminded me that leadership is about showing up, not having all the answers."

### Panel session: Mentorship in action

The mentorship panel was moderated by **Catherine Horseman-Wilson of Wood Mackenzie**, and brought together **Clara Altobelli (FEI Sorano Consulting Ltd)**, **Vince Pizzoni (Independent Advisor)**, **Kaito Chukwudi (King's Entrepreneurship Lab)**, **Neil Frewin (Shell)**, and **Helen Taylor (Copper Row Coaching)**.

The panellists shared personal stories and practical advice on building mentor-mentee relationships, navigating career transitions, and fostering inclusive growth.

The session focused on the theme of mentorship and its role in career development. Panellists shared their experiences as both mentors and mentees, offering insights into how to build trust, give and receive feedback, and create space for growth. The discussion highlighted the importance of sponsorship, allyship and intentional relationship-building – especially for women navigating traditionally male-dominated environments.



Keynote: Catherine Allsop, VP Subsurface UKI, Equinor



Fireside chat: Nicki Adams (BP) and Charlie Abrines (Energy Council)



Panel session: Mentorship in action

## The Next Generation... continued

Attendees appreciated the diversity of perspectives and the practical takeaways, with one participant noting: "This panel gave me a new perspective on how to be a better mentor – and how to ask for what I need as a mentee."

### Workshops: Practical tools for professional growth

The afternoon featured seven interactive workshops, each designed to provide attendees with actionable skills and knowledge:

- Human skills in an AI world**  
 The session was led by **Helen Taylor, Copper Row Coaching**, and looked at the increasing importance of adaptability, emotional intelligence and resilience in fast-changing, AI-driven environments.
- AI and the job hunt: What's working, what's not, and how to stay ahead**  
**Sarah Burke, Odgers**, discussed how AI is reshaping recruitment, and offered practical tips for candidates to navigate the evolving hiring landscape.
- Seven reasons why joining a Board is good for your career**  
**Maria Blakley, Women on Boards UK**, guided participants through the strategic benefits of board roles, offering insights into how such positions can accelerate career growth and influence.
- Navigating menopause at work: Strategies for success**  
**Jo Lee-Morris, Henpicked**, provided inclusive strategies and practical tools to support wellbeing and productivity during menopause, aimed at people experiencing it and their workplace allies.
- From slides to story: Turning information into influence**  
**Jagoda Ciepla, Accenture**, led a hands-on session on transforming data-heavy presentations into compelling narratives that connect and inspire action.
- How to get the most out of mentorship**  
**Vince Pizzoni** shared his extensive experience mentoring across career stages, offering guidance on building meaningful relationships and leveraging mentorship for personal and professional success.
- Soft skills and negotiation for career and life**  
 This workshop was delivered by **Nadine Amr, Dasha Okhotnikova** and **Alice Greaves** from **AIEN** and **Shell**, and focused on building confidence, advocating effectively and applying negotiation strategies in both professional and personal contexts.



Workshop: Navigating menopause at work

Each session was led by experienced facilitators and encouraged open dialogue, peer learning, and reflection. Feedback on LinkedIn was overwhelmingly positive, with many attendees highlighting how the workshops gave them "practical tools they could use immediately" and "a renewed sense of agency".

### Masterclass: Emotional intelligence

The day concluded with a masterclass titled 'IQ vs EQ & (mis)communication – shifting to connection', led by



## The Next Generation... continued

**Christopher Banks, SLB Principal Geoscience and New Energy Consultant.** It brought key themes from the seminar – leadership, inclusion and innovation – into a forward-looking discussion on the future of energy, alongside emotional intelligence and its role in effective leadership and communication.

### Kanpai: Closing celebration

A celebratory Kanpai toast, sponsored by **JOGMEC**, wrapped up the day, bringing attendees together for drinks and canapés. The toast served as a joyful and symbolic close to a day filled with learning, connection and inspiration.

### A platform for progress

The 2025 WiE Seminar was more than just a conference – it was a celebration of progress and a reaffirmation of SPE London's commitment to fostering a more inclusive and forward-thinking energy industry. It underscored the vital role of women in driving innovation and sustainability and offered a space where professionals could connect, reflect and grow.

As one attendee summed it up on LinkedIn: "I left the seminar energised, equipped, and proud to be part of a community that's shaping the future of energy with purpose and passion."



### Save the date!

**We're already looking ahead to next year's seminar on 17 June 2026.**

If you'd like to be involved, have ideas for themes or speakers, or are interested in sponsoring the event, we'd love to hear from you. Whether you're passionate about a topic we should cover, know someone whose voice needs to be heard, or want to help make the day happen, this is your chance to help shape the conversation.

Drop us an email at [spelondon.wie@gmail.com](mailto:spelondon.wie@gmail.com)  
Let's keep building this incredible community together.





# Introduction to upstream oil and gas in a net zero world (November 2025)

**Get your tickets now!**

Join us for a comprehensive one-day seminar designed to provide a clear introduction to the entire oil and gas lifecycle – the event that SPE London has run for 17 years. Whether you're new to the industry or looking to broaden your technical understanding, this seminar covers all the key elements, including exploration, production, geoscience, drilling, reservoir engineering and commercial terms. This year's event brings a fresh focus on the Energy Trilemma – the complex balance between energy security, affordability and sustainability – a particularly pressing issue for the UK, with no easy solutions in sight.

## Why You Should Attend:

- Gain insights into the full E&P cycle, from exploration to production.
- Learn about the Energy Trilemma and its relevance to the UK's energy landscape: balancing security, sustainability, and affordability.
- Introduction to M&A and deal-making in the industry.
- Understand Net Zero initiatives, including geothermal energy, carbon capture and storage (CCUS), and CO2 reporting.
- Network with industry experts and professionals from a wide range of career paths.
- Presentations are aimed at non-technical professionals—no prior experience needed.

This seminar is perfect for professionals working in or with the oil and gas industry, including those in finance, legal, IT, recruitment, and logistics. It is especially valuable for those new to the industry or looking to enhance their understanding of the technical and commercial processes involved in oil and gas projects.

## Agenda

- 09:00 - 09:10: Introduction
- 09:10 - 09:50: The Role of E&P in the Energy Trilemma
- 09:50 - 10:30: Geosciences
- 10:30 - 10:50: Morning Break
- 10:50 - 11:30: Drilling
- 11:30 - 12:10: Reservoir Engineering
- 12:10 - 13:00: Lunch
- 13:00 - 13:40: Production Facilities
- 13:40 - 14:20: Upstream Economics
- 14:20 - 15:00: Upstream Digital Transformation
- 15:00 - 15:20: Afternoon Break
- 15:20 - 16:00: Sustainability and Reporting
- 16:00 - 16:40: Energy Transition Career
- From 16:40: Networking drinks

**Secure your spot now and join us to gain a full overview of the upstream oil and gas industry, hear from industry experts, and network with a diverse group of professionals.**

WHEN:	Tuesday, 4 Nov 2025
WHERE:	The Geological Society, Burlington House, Piccadilly, London W1J 0BD
TIME:	09:00 - 17:00 GMT

# Celebrating Arkwright Success!

Earlier this year, the SPE London Section welcomed its newest Arkwright Engineering Scholar, Keza Foster, to its growing cadre of SPE Arkwright Scholars. For this edition, it's a great pleasure to celebrate the success of Natalie Jackson, a recent Arkwright graduate. Natalie completed her A-levels in Maths, Physics and Further Maths and has successfully landed a place at Cardiff University to study Engineering. Please join us in wishing Natalie all the best on her academic journey!



Natalie Jackson

The Arkwright Engineering Scholarship programme has operated for more than 30 years, helping nearly 6,700 scholars in over 1,100 schools, with a growing percentage of females.

The SPE London Section has supported the scheme for several years. In April 2019, the SPE London board backed a commitment to sponsoring our first Arkwright Scholarship student for two years, commencing September 2019. The April 2019 issue of SPE Review London explored details of this scholarship scheme and an overview of its potential benefits.



Keza Foster

The benefits associated with SPE sponsorship of the Arkwright Scholarship Scheme are founded on five core commitments, visualised here (left). These commitments are interdependent, with the outcome being a tripartite, mutually beneficial win for the Scholar, Arkwright and SPE London.

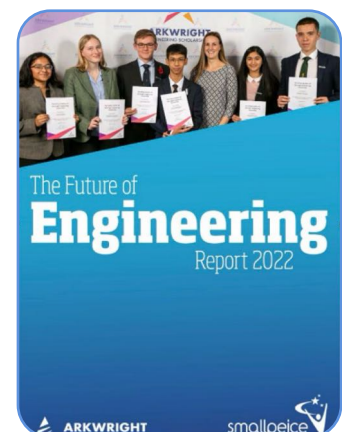
In its most recent support programme, the Section had the opportunity to sponsor five aspiring engineers as they considered how they could impact the considerable engineering challenges faced in the 21st century.

## Arkwright Engineering Scholarship Status

The Arkwright Engineering Scholarship aims to support exceptionally talented 16- to 17-year-old students who show a deep interest in following an engineering career. The SPE London Section highlights the engineering careers within the evolving energy industry, from traditional choices to those that will support the energy transition.

With the support of our sixth scholar, we are contributing to the increasing diversity within the Arkwright Scholar Awards. This year, the ratio of male to female scholars is 60/40 per cent, respectively, and the number of scholars selected from state schools is approaching 70 per cent.

The Section focuses on supporting scholars attending local authority schools, with a particular preference for encouraging more females to enter the field of engineering. The Arkwright scholarship scheme aims to achieve as balanced a representation of scholars by gender as possible.



# Role of international oil companies in the net-zero emission energy transition (part 2 of 3)

Scientific and engineering capabilities in hydrocarbon supply chains developed over decades in international oil and gas companies (IOCs) uniquely position these companies to drive rapid scale-up and transition to a net-zero emission economy. Flexible large-scale production of energy carriers such as hydrogen, ammonia, methanol, and other synthetic fuels produced with low- or zero-emission renewable power, nuclear energy, or hydrogen derived from natural gas with carbon capture and storage will enable long-distance transport and permanent storage options for clean energy. Use of energy carriers can overcome the inherent constraints of a fully electrified energy system by providing the energy and power densities, as well as transport and storage capacity, required to achieve energy supply and security in a net-zero emission economy, and over time allow optimization to the lowest cost for a consumer anywhere on the globe.

**Authors: Dirk J. Smirt and Joseph B. Powell**

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## A future role of IOCS: A dilemma and an opportunity

The scale at which the energy system must operate to allow growth in developing markets such as Asia and Africa will require changes in energy production and transport and in modes of consumption. The required changes go far beyond scaling up of renewable resources.

As the world moves away from fossil fuels, state-owned national oil companies (NOCs) as resource owners will command a larger percentage of production, compared with independent IOCs, and can focus on the most efficient, lowest-cost, and lowest-carbon footprint oil and gas fields. Absent new discovery, oil and gas production declines eight per cent yearly on the average. For an IOC, this is a conservative estimate, as its resource assets are more difficult to produce and require continued investment in advanced technology<sup>(20)</sup>. High-capacity factors, or the percentage of time an energy resource is available annually, and low storage costs for oil and gas versus renewable wind and solar energy will continue to provide a strong value proposition for traditional hydrocarbons. Ultimately, demand for oil and gas will be decided by the degree of acceptance of carbon capture and storage (CCS) for mitigation of fossil energy use, society's desire to place a cost or price on CO<sub>2</sub> emissions, and stakeholder preferences and plausibility for wind and solar variable renewable energy (VRE) versus other clean energy options (nuclear, hydroelectric).

Both NOCs and IOCs may shift portfolios toward renewable and low-carbon energy to supply stakeholder demand in global markets, potentially via forming separate fossil and low-carbon businesses or organizations. For NOCs in the Middle East, solar intensity and low-cost land may allow faster ramp-up of renewable power than in other regions like Europe and Asia. Business models in fossil energy supply and services are relevant for enabling scale-up of low-carbon energy supply and services. This is especially true for IOCs, which have been forced to develop deep capabilities in technology and engineering as well as supply-chain management to remain competitive, for a system where oil or natural gas is not only the energy source but also the high-energy density carrier that may be transported in bulk or stored.

Thus, for oil and liquified natural gas in the current energy system, the primary energy source (subsurface fossil hydrocarbon) is also the energy carrier used for transport to market. From this perspective, the biggest difference with a net-zero energy system is that this will no longer be the case. Primary energy sources such as solar photons must first be converted to electricity, which can then be transported via transmission lines. Direct use via electrification or storage in electrochemical cells (batteries) is more efficient than the

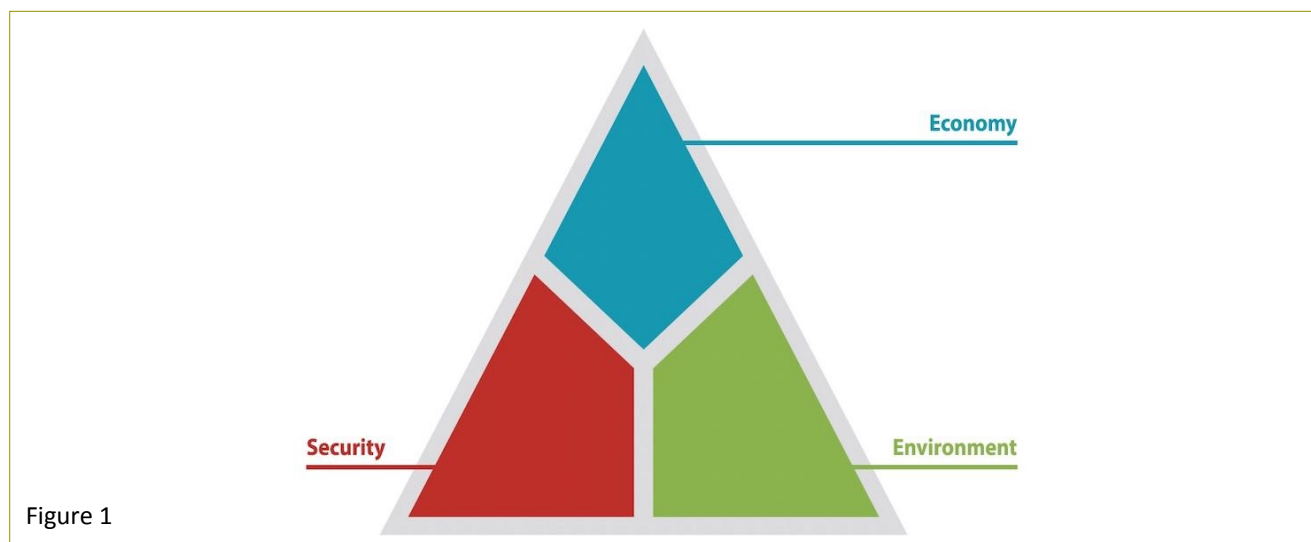




## Role of international oil companies... continued

conversion to molecular energy carriers or fuels. This contrasts with a fossil hydrocarbon-based energy system, in which electricity is produced via combustion of molecular energy carriers at lower efficiencies. However, major technological challenges to direct electrification, as well as to storage, impede the scale-up of an energy transition. For example, transmission over distances of more than 1,000 km is not very efficient and, therefore, more expensive, and is not flexible compared to transport of chemical carriers such as oil. Note that the lower capacity factor of larger wind farms favours more, smaller windfarms distributed over larger areas, implying that distances to markets increase. Furthermore, and more importantly, electricity production via solar photovoltaic (PV) or wind turbines is instantaneous and intermittent, requiring effective and efficient energy storage on daily or seasonal timescales for many customers. These factors constrain the speed at which the energy system can be scaled, especially for hard-to-abate industrial sectors requiring high power density. Over longer distances (>1,000 km) and time durations, and to obtain the higher energy and power densities needed to support industrial manufacturing or urbanized city centres, molecular or chemical carriers may be required.

A potential alternative to use of molecular or chemical energy carriers is production of excess electricity to deal with the variability associated with solar and wind resources, augmented by dispatchable nuclear, hydroelectric, geothermal, or biomass-derived power. Molecular or chemical energy carriers can be produced and used locally to store intermediate wind and solar power or produced in regions of higher wind and solar intensity and shipped the long distances needed to connect to regions lacking in advantaged renewable resource intensity. IOCs can thus move from being suppliers of fossil fuels to suppliers of molecular or chemical carriers needed for energy storage and transport. They can thus offer parallel routes to transition to a net-zero emission energy system beyond transmitting electricity and thereby enable and accelerate the transition.



The energy policy triangle (4)

As the energy policy triangle (*Figure 1*) illustrates, the pace of systemic change will be driven not only by climate or environmental drivers but equally by national policies ensuring energy access and business opportunities as well as technology innovation. NOCs own the resource and mineral rights, are often the low-cost producer, and have a vested interest in and market advantage for continued production of fossil resources. Although the International Energy Agency (<sup>21,22</sup>) expects world oil production to decrease 70 per cent by 2050, the NOCs' share of production will increase from 34–52 per cent. This means that IOCs will divest away from fossil assets more quickly than NOCs, and hence will need to accelerate new, low-carbon businesses to ultimately become the main source of income in pursuing a transition to net zero. An important aspect to anticipate is the role of energy carriers (other than oil or gas) in connecting clean or renewable resources to a variety of energy consumers or markets that may be far away from the production of the primary energy resource (as is the case for oil and gas). Energy transport and storage of oil and gas are

## Role of international oil companies... continued

currently major aspects of an IOC's business model, which can be adapted to transport, storage, and supply chains of renewable and other clean energy resources. Decades of unique chemical engineering and technology developed in IOCs can be leveraged to enable new carriers for energy transport and storage.

### A role of an IOC that leverages its unique capabilities and strengths to accelerate the transition to net zero?

IOCs have a proven ability to scale up energy availability by developing flexible and economically attractive supply chains to allow distribution of both energy resources (oil and gas) and higher-end refined products into any global market, far away from the locations where energy is produced. This capability was developed mostly by exploiting the high-capacity factors of energy production systems (oil wells and platforms) coupled with high-energy density carriers to provide storage and transport to consumers (e.g., industries) in developing societies who require more and more high-power densities.

The scale of such a system may grow to global proportions in a matter of a few decades. IOCs have enabled and contributed in a major way to this growth via continuous cost reductions through technology systems innovations and global supply chain development, enabling investments in large-scale infrastructure.

After many decades of perfecting this business model, IOCs today hold important global expertise on supply chain systems and operational experience in systems engineering to achieve scale and reliability at affordable cost and effort. In this capacity, an IOC is usually an orchestrator of delivery of complex, capital-intensive projects.

A transition to a net-zero emissions system will see greater variety in energy resources to be produced. However, the biggest difference is that renewable resources are often produced with low-capacity factors and suffer from significant intermittency with fast ramp-up and ramp-down of installed or rated power output. Because weather variations occur characteristically on the scale of hundreds of kilometres or more, measures to compensate for such variations will require long-distance transport and storage with high energy densities to make this affordable. The western United States, including California, suffers from seasonal intermittency that effectively reduces the capacity factors of renewable systems to 25–40 per cent for combined solar and wind systems<sup>(23)</sup>. Most energy markets cannot handle the typical variations in instantaneous resource supply, which require large amounts of energy storage on seasonal timescales, in particular for high-power density energy users. Thus, high-power density users will benefit from the availability of large volumes of chemical energy carriers produced at low cost and that can be stored affordably over a long time. Consumers requiring lower power densities may be able to directly use electrified processes with current technology, which would be more efficient, provided the storage required to deal with intermittency is feasible at affordable costs. We now see a distinction between lower- and higher power density users, for which the latter's transition to net zero would be significantly enabled by chemical-dense energy carriers.

Decarbonization of high(er) power density industrial processes requires systems innovation and development of new integrated processes. Such systems changes will happen only with a more orchestrated approach to find common interest and collaboration among governments and private sectors<sup>(2)</sup>. Here we see another difference, depending on economic development. In Asia, for example, the middle class is expected to grow by approximately three billion people over the next two to three decades, which is strongly correlated with the growth of industries such as steel, cement, and petrochemicals. These industries all require high power densities. As a result, these industries are organized in relatively large, centralized plants, which require a large amount of energy even at the minimum scale to be economically feasible. In fact, the decarbonization of these industries requires more systems changes, whereby energy access, use, and emissions resulting from the industrial process all must be changed as a system. Such systems engineering is common in the constant



## Role of international oil companies... continued

innovation to drive costs down in an IOC's chemical and manufacturing business – perhaps more so than in cement and steel manufacturing, which generally has seen less innovation over the past decades. The latter's transition to clean/green energy solutions could lead to partnerships with IOCs in an optimal design of energy consumption in the manufacturing processes itself. Eventually, these processes may be completely electrified, but it may take a long time to replace existing steel and cement plants with new, redesigned processes, due to the capital invested in these plants preventing fast write-offs.

Furthermore, IOCs have significant expertise in digital and data-driven engineering technology development. Digital engineering technologies enable the energy transition in process industries in a major way. They also allow for more consumer-centric processes, which will be crucial to transparent highlighting of trade-offs required to achieve scale. The current energy system is a supply chain business built around fossil energy resources. A net-zero transition will replace this with a much more diverse set of supply chains of resources ranging from materials to energy resources for storage and transport. However, with real-time customer and process data representing trends and dynamics at national and regional scales and the ability to interpret and predict customer choices in energy system trade-offs, this net-zero transition will also be a digital transition allowing the consumer to choose among supply chains for resources. This is already reflected in nation-states' responses to addressing climate threats with local technology opportunities to decarbonize while prioritizing economic independence and individual well-being.

Unfortunately, the need for trade-offs is often not apparent to all stakeholders. Technological innovations in renewable solar and wind energy result in lower prices for instantaneous power or VRE. The existing energy economy can accommodate small amounts of low-cost variable inputs via process control of demand response or use. Many societal and industrial uses or needs require energy or power when the sun is not shining or the wind is not blowing, however, and as the percentage of VRE increases, energy storage, which previously was provided by default with fossil fuels, now must be provided. Storage of electricity and energy is, however, fundamentally more difficult and expensive than providing instantaneous photons, heat, or electrons when convenient.

Due to the ease and low cost of integrating a small amount of VRE into the energy system, the high costs of large-scale reliance on intermittent renewable energy sources are not apparent to many stakeholders. The Wall Street Journal places the price tag of energy transition to net zero at approximately US\$ 131 trillion, relative to a world GDP of approximately US\$ 100 trillion in 2021, of which a significant part goes into storage solutions <sup>(24)</sup>. This is a significant cost for discretionary spending, especially for developing countries with limited ability to fund projects over and above those required for basic needs. Similarly, developed economies have difficulty funding discretionary projects, and increases in energy prices have historically resulted in decreased economic growth. Global funding of projects and technologies needed to address climate change, without comprising the growth engines needed to provide that funding, is thus an existential issue but may be enabled by IOCs that traditionally coinvest in such projects to provide fuels and energy products to markets.

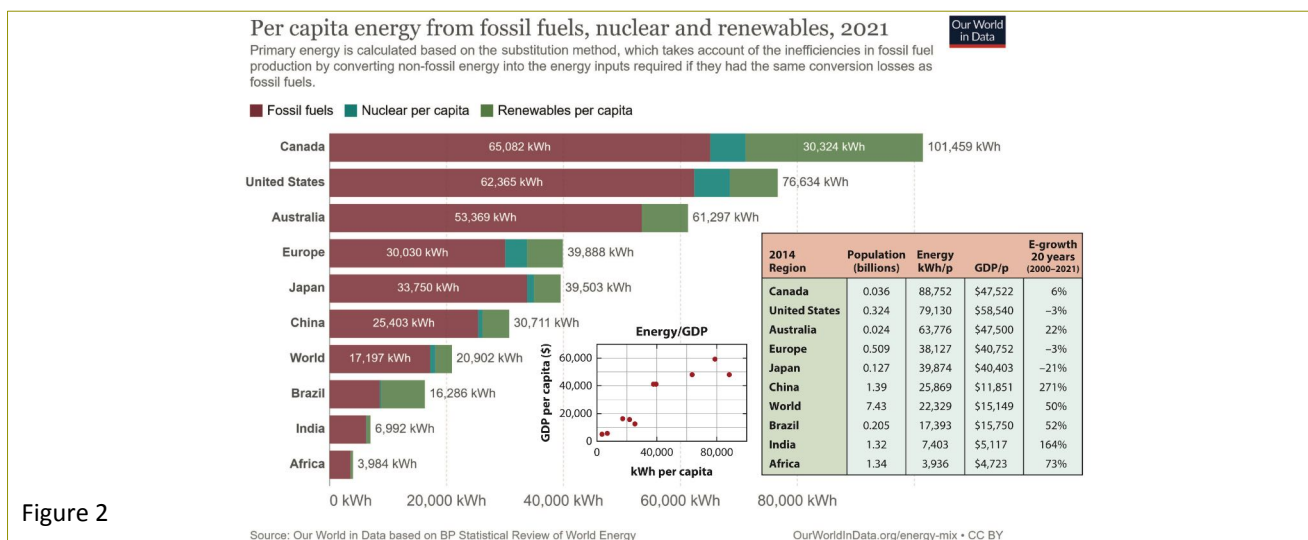
A recent study by McKinsey <sup>(25)</sup> shows the correlation between a country's transition exposure and per-capita GDP. Climate effects pose greater risks to less-developed societies. *Figure 2* shows global primary energy sources in 2021, along with per-capita energy and percent total energy growth since 2000. China and India continue to expand energy consumption at rates much higher than the developed world, whereas Africa has yet to develop basis low per capita energy and GDP. An IOC's supply chain business model, in particular energy transport and storage, may put it at an advantage in the movement to disseminate clean energy from resource-intensive regions (wind and solar, fossil with CCS) to those with expanding needs and markets.

Climate risk correlates strongly with societies in which large numbers of people will move out of poverty and enter the middle class. Countries in Asia, where the middle class is projected to grow by three billion people by 2050, have more urgent drivers to mitigate climate change effects that otherwise can impact agricultural production, access to clean water, and resilience of large urbanized coastal areas. The sheer size of a





## Role of international oil companies... continued



Primary energy sources versus population and gross domestic product. New graphic constructed from *The Our World in Data – Grapher* (<sup>26</sup>). Abbreviations: GDP/p, per capita GDP; kWh/p, per capita energy.

developing middle class growing much faster than the world population may shift economic activity more toward the Indian Ocean – away from the West (<sup>27</sup>). Hence, net-zero transitions may become a national strategic driver in large and fast-developing economies in Asia, with reverberations far beyond Asia.

### High-density chemical energy carriers to accelerate a transition to a demand-driven net-zero emission energy system

The key to accelerating a net-zero transition lies in creating as much flexibility and optionality as possible in the production of low- or zero-carbon chemical energy carriers (<sup>28–30</sup>) to provide a scalable supply chain business that is optimized for the lowest cost. The high energy density of various chemical energy carriers or vectors will allow for a trading or arbitrage model, similar to the current fossil hydrocarbon energy trading businesses but with more consumer choice. A more diverse set of energy carriers distinct from the primary resource can (and will) create larger consumer differentiation and more diverse consumer markets, which can connect to the same energy resource via chemical carriers of choice. This may indeed be the basis of a commercial model allowing scale-up of renewables during the transition, and thus shows the strategic importance of high-energy density chemical carriers or vectors in a net-zero emission system. The overall result is a shift from a supply-based energy system to a more demand-driven, and hence consumer-centric, energy system. This has profound implications for the production systems of these molecular energy carriers, which will be driven much more by demand than by access to primary resources.

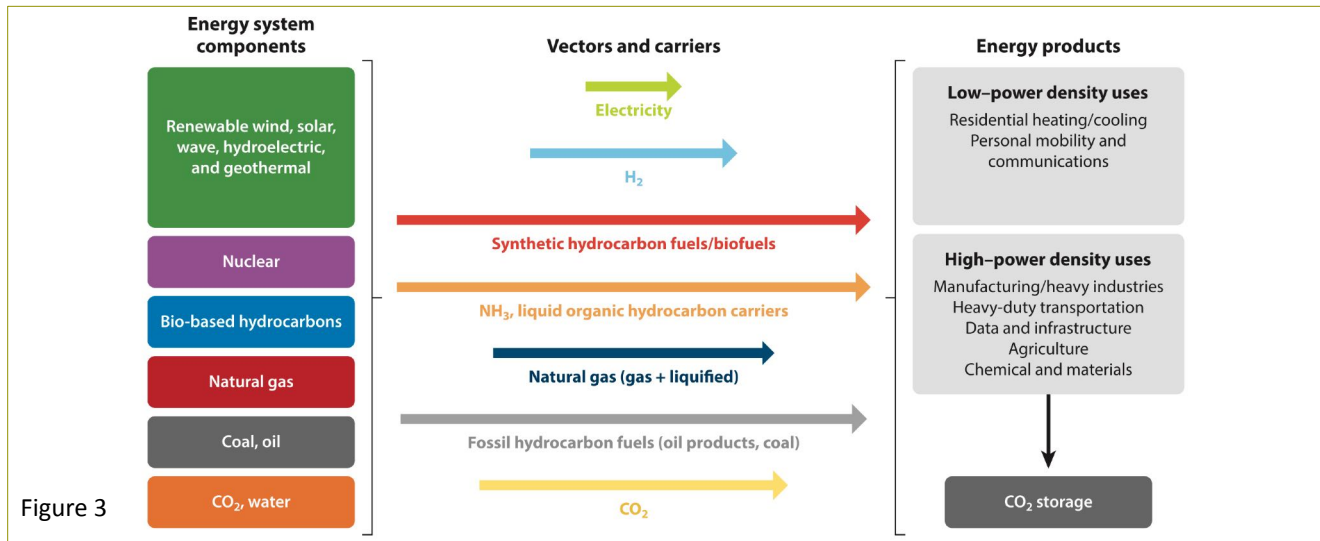
As an example, a country like Japan may want to see scale-up of renewables as a primary resource but may not have enough space (land and nearby offshore) to produce the quantities needed. Hence, it may rely in part on long-distance energy transport and may decide based on infrastructure requirements and implied costs or efficiency to favour ammonia over direct hydrogen as a vector for obtaining clean energy from regions (e.g., the Middle East) where land availability and source intensity are optimal. Thus, carriers like ammonia gain strategic relevance in the decarbonization process, as opposed to current use dominated by chemical production for fertilizers. The design of a supply chain built on high-energy chemical carriers to create flexibility in how to connect various low- or zero-carbon energy resources to any consumer market becomes important to a transition to a net-zero emission energy system in which the dominant energy resource may well be renewable power.

Energy carriers allow decoupling of an energy source from its application, which enables existing manufacturing facilities that are not ideally located in regions of abundant wind and solar power to continue to operate. They also allow optionality in the various global sources of clean energy (wind, solar, nuclear, natural gas with CCS), which provides for lower-cost, competitive energy markets and supply security. A net-



## Role of international oil companies... continued

zero emission system would be more customer oriented, and thus would provide a more resilient system and potentially a faster pathway to net-zero emissions.



International oil companies' future business model leverages expertise in generation, transport, and storage of energy and energy-derived products at global scale. Sustainable solutions using vectors derived from renewable or clean energy will grow in scope and replace traditional fuels. CO<sub>2</sub> can be stored or combined with clean energy to make sustainable products. (The lengths of the vectors reflect relative transport distances.)

Figure 3 summarizes the complex future global system for integrated energy and chemicals, in which an IOC is optimally positioned to participate. Capacity and cost to produce wind and solar will vary globally as a function of resource intensity, capacity factors, land availability, and cost. Low-cost natural gas production will occur in advantaged basins and not necessarily overlap with those acceptable for CO<sub>2</sub> or hydrogen storage. Large markets in expanding urban areas for energy products and services, including storage needed for 24/7 quality of life, will generally not be co-located with global best energy resources. Existing manufacturing complexes were developed for an oil-and-gas fossil economy in which resource and energy carriers have been combined in a low-cost, globally efficient market.

Continued use of these mega-complexes will require an influx of clean energy via use of pipelines and grid power over shorter distances, where plausible but, otherwise, will require supply via long-distance energy carriers. Product manufacturing may move to co-locate nearer to clean energy sources, with shipping of products containing the embedded energy to market, versus shipping of energy carriers to manufacture close to markets.

Nuclear power is portable and can be transported to any location to provide high energy density, but suitable advanced reactors to provide the necessary process heat, or ability to electrify all high-temperature processes, have not yet been fully developed and proven. Hydrogen can play a key role in transporting and storing clean energy, offering zero-emission potential at point of use and higher energy density storage (120 MJ/kg)<sup>1</sup> versus lithium-ion batteries (1 MJ/kg). Hence, it can play a multipurpose role as a clean energy transport and storage vector, albeit at an efficiency approximately half that obtained from direct electrification (<sup>2, 28–30</sup>). Use of hydrogen to make synthetic fuels via reaction with captured atmospheric or biogenic CO<sub>2</sub> provides hydrocarbon fuels to compete with less-available biofuels as a means for using existing infrastructure, but the resulting use as a combustion fuel will continue to generate criteria pollutants and impact local air quality (smog and particulate matter), which is increasingly becoming less acceptable to global stakeholders.

## Role of international oil companies... continued

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**\*\* Part 3 of this article (and the Conclusion) continues in our next issue.**



# Meet the SPE London Board 2025

The Society of Petroleum Engineers (SPE) is a not-for-profit professional association with more than 140,600 members in 144 countries engaged in oil and gas exploration and production. The SPE London board oversees SPE London activities, including evening programmes. Our various committees have specific focus, including Young Professionals, Women in Energy, Net Zero and associated student chapters. As well as engineers, we also welcome qualifications in geology, geophysics, earth science, environment, health and safety, mathematics, information technology, management and economics.

The SPE London Board brings together a diverse group of professionals from operators, service companies, consultancy and academia. The team's expertise spans reservoir engineering, wells, consulting, CCUS and digital transformation, and it is united by a commitment to advancing knowledge, supporting members, and driving the energy transition through collaboration, education and community engagement.



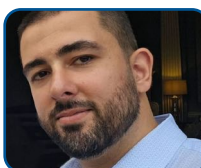
## Chair – Mehdi Alem

**Mehdi** is a Reservoir Engineer at bp with experience across the North Sea, North Africa, and the Middle East. A graduate of Imperial College London (MSc) and UCL (MEng), he has been active in SPE for over six years and is passionate about the role subsurface plays in building a sustainable energy future.



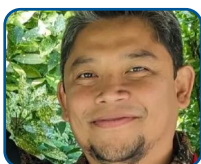
## Past Chair – Adam Borushek

**Adam** is a London-based Reservoir Engineer with 25 years of international experience. As Principal Advisor at RISC, he supports clients on asset acquisitions, reserves reporting, and field management. A long-standing SPE leader, he is also active with SPEE and GESGB.



## Chair Elect – Shwan Dizayee

**Shwan** is a Manager at Accenture, combining consulting expertise with hands-on petroleum engineering experience in Iraq and the UK. He helps energy companies bridge the digital gap, with a focus on downstream retail and unlocking value through technology.



## Treasurer – Farid Hadianman

**Farid** is a Senior Wells Engineer at bp and has previously worked with TotalEnergies, Petronas, and Maersk. With degrees from ITB and Robert Gordon University, he has been an SPE member for more than 20 years, has published extensively, and is a proud recipient of an SPE Regional Award.



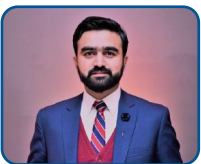
## Communications – Afrah Siddique

**Afrah** is an energy professional with over a decade of international experience in reservoir engineering, spanning oil and gas, CO<sub>2</sub> sequestration, geothermal energy and hydrogen storage. She holds an MSc in Petroleum Engineering from the Colorado School of Mines and has worked across the USA, UK and Middle East. Afrah is deeply committed to advancing the net-zero energy transition and brings this passion to her role on the SPE London Section board, as well as her contributions to several SPE International committees.



## Students – Omer Khoshnaw

**Omer** is a Reservoir Engineer at INEOS, working on a gas asset in the UK Southern North Sea. With a background in consultancy and training, he enjoys collaborating with teams and helping students connect with the industry.



## Young Professionals Chair – Yazir Mumtaz

**Yazir** is an experienced Reservoir Engineer who has worked both with operators and in the service sector. He is currently advancing CCS simulation projects while drawing on his background in production optimisation and mature oilfield development.



## Meet the SPE London Board... continued



### Inter-society – Carolina Coll and Malvika Nagarkoti

**Carolina** is Head of Reservoir Development, CCS & Energy Storage, with over 25 years of global experience. She plays a leading role in international committees on reserves, CCUS, and energy storage, and has been a driving force in SPE initiatives. **Malvika** leads Global Brownfields Development for

a major consultancy, with experience across Europe, Asia and Africa. A petroleum engineer with an MBA, she thrives on finding efficient, practical solutions for mature assets.



### Net Zero – Max Richards

**Max** is Group Business Development Manager at OPC, where he leads the energy transition practice and carbon storage projects. He holds an MSc in Geoscience from UCL, where his research focused on CO<sub>2</sub> mineralisation in partnership with CarbFix and Aramco.



### Sponsorship – Phuc Truong

**Phuc** is an engineer with Perenco, passionate about solving upstream challenges from artificial lift to well interventions. Having worked across four countries with Canadian, Japanese, and French operators, he thrives on tackling the complexities of ultra-mature fields.



### Membership – Arsenij Fiodorov and Lester Clark

**Arsenij** is an Imperial College MSc Petroleum Engineering graduate, eager to apply his skills and grow his career. Known for his focus and initiative, he enjoys tackling complex problems with a practical mindset.



### SPE Review London Editor – Elizaveta Poliakova

**Elizaveta** is a Well Performance Engineer with Subsurface background at Trident Energy. She studied Petroleum Engineering at Leeds (BSc) and Imperial College London (MSc) and has been involved with SPE for more than seven years. A former SPE London Chair, she previously led both the Imperial and Leeds student chapters.



### Programme – Andrew Mynors

**Andrew** is Business Development Manager at Geolog, bringing 30 years of upstream service experience. After working in the North Sea, Middle East, and Far East, he now focuses on geothermal, CCS, and lab-based solutions for global clients.



### Continuing Education – Alejandro Primera, Frank Folorunso, Khaled Al Marei and Hani Hamoud

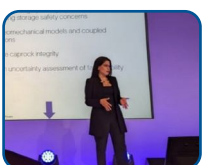
**Khaled** is Principal Reservoir Engineer at Storegga, with 20 years of experience in reserves audits and

CCS subsurface modelling. He is passionate about professional development and supporting young geoscientists through education and mentoring.



### Women in Energy – Isabel Asenjo

**Isabel** is a Senior Reservoir Engineer at Sasol with 13+ years of experience worldwide. A long-time SPE volunteer, she now chairs Women in Energy, encouraging a more gender-balanced workforce. She received the SPE London Outstanding Service Award in 2014.



### Social Chair – Clairet Guerra

**Clairet** is a Senior Geomechanics Engineer with SLB, now working as a product analyst in software and technology development. With a strong interest in space exploration, she recently completed a degree in Space Resources to explore technology transfer from Earth to space.

# SPE events calendar – local and international

## LOCAL – UK

### Ongoing through 2025 (London, England)

#### London SPE events

##### Energy on Draft!

Quarterly social evenings open to all experienced professionals and career starters within the energy industry. Come along to catch up with friends and make new connections over drinks!

##### Tech Talks

Monthly events on various topics of interest to industry professionals. Speakers include Distinguished Lecturers.

**Net Zero webinars:** Insights and more.

More information: [SPE London](#)

### November 11–12, 2025 (Amsterdam, Netherlands)

#### SPE Workshop The Future of Well Integrity

It is estimated that there have been 5 million oil and gas wells drilled, about 1 million of which are still active. This represents the potential for a huge well integrity database and the ability to build digital twins for our new wells. Although machine learning and the consequential digital twinning is well advanced in surface systems so far it has remained on the future projects shelf for wells. Providing clarity of career path and communicating that to young professionals is key.

More information: [Workshop](#)

## INTERNATIONAL

### October 14–16, 2025 (Jakarta, IDN)

#### APOGCE

A collaborative effort between SPE and IATMI since 1999, APOGCE is the premier upstream technical conference in the Asia Pacific region, covering the broadest range of disciplines involved in energy transition, exploration and production activities. Discover the latest industry trends, innovations and technologies. Enrich your technical knowledge with new methodologies, techniques and methods enabling environment for CCS/CCUS development.

More information: [Conference](#)

### October 20–22, 2025 (Houston, Texas, USA)

#### SPE ATCE

SPE proudly presents the 2025 Annual Technical Conference and Exhibition (ATCE), continuing a legacy of innovation, collaboration, and progress in the oil and gas industry. At ATCE 2025, Solutions » People » Energy represents the core of SPE's commitment to advancing the energy industry. This dynamic theme emphasizes the power of innovative solutions, the expertise of the people driving change, and the sustainable energy future we're building together.

More information: [SPE conference](#)

### October 28–30, 2025 (Rio de Janeiro, Brazil)

#### OTC Brazil Conference

OTC Brazil Conference gathers offshore professionals from many countries around the world to share ideas and innovations, discuss, debate, and build consensus around the most pressing topics facing the energy sector. Over 200 exhibitors, one of the biggest meeting of offshore sector!

The best place for networking with C-level professionals, to discover the new technologies and emerging trends of the industry.

More information: [Conference](#)

### November 3–6, 2025 (Abu Dhabi, UAE)

#### ADIPEC Conference

Taking place from 3-6 November 2025 ADIPEC is a global energy platform where dialogue becomes delivery, solutions are showcased, decisions are made and collaborations are catalysed.

Through its conferences and exhibition, ADIPEC champion intelligent choices that embrace all viable energy sources, technologies and innovations to build sustainable systems that deliver energy to more people, more affordably, and with lower carbon intensity.

More information: [Conference](#)

For a complete listing of all events on the SPE Global Events Calendar: [spe.org/en/events/calendar/](https://spe.org/en/events/calendar/)  
And, for more information about SPE training courses, calls for papers, and opportunities for SPE London sponsorship: [SPE London](#)



# SPE policy on AI-generated content in publications

## SPE Policy on AI-Generated Content in Publications

The SPE Board has approved a new policy allowing AI-generated content to be used within SPE publications under specific conditions.

AI-assisted language tools (such as ChatGPT) have gained widespread attention recently, particularly for their capability to assist in drafting scientific papers. While these tools have the potential to enhance the efficiency and speed of academic and technical writing, the ethics and best practices for their use are still evolving. These tools may generate useful information and content but are also prone to errors and inconsistencies.

**The SPE Board has approved a new policy for authors who use AI language tools** to generate content for their papers. The policy states that AI-generated content may be used within SPE publications but under specific conditions.

- AI language tools may not be listed as an author. The AI tool cannot sign publishing agreements or transfers of copyright.
- Any AI-generated content that is used within a manuscript should be thoroughly vetted, fact checked, and disclosed.
- If AI language tools are used within a manuscript, their use should be clearly explained within the methodology or acknowledgment section of the paper. If AI-generated content is included within a manuscript without an explanation, this can be grounds for rejection of the work at the discretion of SPE and may result in a code of conduct review.
- The authors of the manuscript will be held responsible for any errors, inconsistencies, incorrect references, plagiarism, or misleading content included from the AI tool.

It is important to note that technology for AI language tools is advancing rapidly. SPE plans to periodically review and update this policy to ensure its relevance and effectiveness. Any modifications to the policy will be communicated transparently and in a timely manner.



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