Insights from interviews and opinions published in New Power

Expert information for all those invested in the UK’s energy future
Women are under-represented in the energy and power industry – but that doesn’t mean they are not there. The number of women in the industry may be small, but it is growing, and they have a great track record across the industry.

As a specialist publication talking to experts, New Power interviews women - and men - in the industry every month about industry development and key issues. In addition, we print opinion and analysis from diverse authors whose information is important to readers. Here we present brief abstracts from some of the women we have interviewed in New Power and some of those who have been the authors of opinion or analysis in the pages of the monthly Report. We aren’t interviewing them because they are women (who are still the minority of interviewees), but because they are doing important and interesting work, and you will see that in the topics addressed. We hope it will provide evidence of the important role women have to play in ensuring the UK power industry remains at the cutting edge, show something of the contribution women are already making, and provide some inspiration and reassurance to women entering the industry for the first time.

Who would you like to hear from? We interview industry-members every month. Send your recommendations for interviewees to me at janet.wood@newpower.info

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- Angela Peart, chief executive, Utility People
- Toni Volpe, Flack Renewables
- Mark Somerset, Intergen
- Sarb Bajwa, Igem
- Greg Jackson, Octopus Energy
- Tim Payne, Instavolt
- Kevin Mouatt, Anescp
- Felix Lerch, Uniper
- Michael Phelan, Endeco
- Simon Harrison, UK Energy Systems Catapult
Electricity has been a mainstay of decarbonisation so far. But it is just a part of the challenge of decarbonising the whole energy system. For a decade after 2000, electricity, and renewables, were the main focus of government policy, but in the past few years policymakers have started grappling with the larger challenge of heat and transport needs.

This is the among the aims of the Sustainable Energy Association (SEA), which wants to place buildings at the heart of delivering UK energy policy goals. That means producing energy directly from low-carbon and renewable sources and reducing energy waste by upgrading buildings.

That agenda will touch customers directly in a way the switch to renewable electricity has not, because it will require different behaviours from consumers and, in determining the future of domestic gas supply and the gas network, potential changes inside domestic properties.

It’s clearly an area that will require innovation. But what is not clear, until we have a routemap on heat decarbonisation, is the framework within which that innovation will happen. So when I ask SEA chief executive Lesley Rudd about evolving the industry, she first talks about “no regrets” options. That means energy efficiency – building it in from the start, and bringing existing buildings up to scratch.

There is no reason why we can’t do it, she says. “We are building lots of new homes and lots of new connections to the system, and when you are doing that the obvious thing to do is to try to decrease the amount of energy consumers use.” She ticks off the goals it helps achieve: decarbonisation, security of supply, managing a stressed network more efficiently, and reducing fuel poverty.

It’s not always easy to make policy decisions that will have an effect at the level of householders. I ask what has been the most successful government measure in her experience and she says it was the decision, which took effect in 2005, to mandate condensing boilers. “That made a huge difference,” she says. What disappoints her is that the next measure she can point to is 13 years later – a new ‘Boiler Plus’ regulation that takes effect from April this year. She says the gap was too long.

### Lesley Rudd
Chief executive, Sustainable Energy Association

Pamela Taylor is at Ofgem’s “grid edge”. She runs the regulator’s Innovation Link, a service for innovators that gives them feedback on energy and power ideas. It also gives them space to pilot projects in the “regulatory sandbox” – an idea that is being expanded to other industry bodies. But when I speak to Taylor, she says the Link is as important to Ofgem as it is to the innovators.

“We are always hearing that there are regulatory barriers, but if you ask somebody what they are, a lot of the time people find it hard to articulate… It really started with the idea of saying we need to try to understand what some of these barriers are.” The regulator wants to be on the “front foot” as the industry changes, and innovators’ enquiries are an important signpost.

Innovation link invites anyone to come to the regulator with their ideas. Taylor says initial research revealed that “it was very important to people that they have one place to go – they don’t have to go to talk to this team or that team”. That in turn led to the sandbox, because some innovators with well-developed proposals wanted to be able to do trials.

Now, says Taylor, Innovation Link does two things: “On one hand it supports innovators and give them a place to go at the regulator to trial things, but it gives us the answer to that question: ‘What are the regulatory barriers?’ Then we start to understand business models.” She adds: “If you offer people a service they are much more likely to tell you things because they are getting something out of it.”

### Pamela Taylor
Partner, Innovation Link, Ofgem

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Jenifer Baxter  
Head of energy & environment, IMechE

Baxter thinks the falling cost of renewables and the upswing in installation will present its own sustainability challenges. “We need to store [the power], we need to be sure that we can access additional electricity when we need it.” Offshore wind, she says, “will involve some form of storage and we haven’t worked out exactly how that will work either”.

With these plant – and gas – filling the gap, “the question is how we respond”. That is where she thinks the energy industry has to think about the fundamentals.

“There will be more renewables on the grid. There will be battery expansion. But with batteries especially – if you are talking about lithium-ion – it’s not a good sustainable option.” That’s mostly about the materials used in the batteries and the lack of recycling. “If you are promoting that as a solution it seems to me to be careless about the future. And perhaps repeating some history – by saying the technology is quick, easy and cheap.”

She is concerned about the environmental cost and employment practices in mining the raw materials. “I don’t think we are really having that conversation. The battery has no tail emissions, so therefore it helps to meet carbon budgets, but we are not addressing the wider sustainability.” She suggests that some years ago the question was about “sustainability, it was about human rights and ethics across the world. We have now become entirely focused it seems on carbon dioxide emissions, which means we get a bit blinded by that. We don’t necessarily always look at the wider questions. I think that battery technology is one example where we really need to take a step back” to look at other options such as hydrogen.

Jane Lucy  
Chief executive, Labrador

Lucy came into the energy industry because she wanted to use lessons she had learnt about consumer power. She had previously worked on campaigns with TV personality Hugh Fearnley-Whittingstall and says energy was an obvious place to use those lessons: “[The campaigns] were hugely successful in terms of what we did with supermarkets and that type of retail business. Once you can see the power and success of that approach it makes you wonder what other industries it could be used in. Energy is an obvious one.

People have felt disempowered and disconnected from energy for years. We have all experienced something negative in our dealings with energy suppliers over the years. I would like solutions to those problems as much as anyone else.” That sounds negative, but Lucy is hugely enthusiastic about the smart meter rollout. For her, the key point is that “it’s the customers that own the smart meter data, not the energy suppliers or the DNOs”. “Customers are put into this fantastic situation where they own the asset – the data. It allows customers to be in control.”

She thinks it’s an opportunity that is being missed: “Being a supplier-led programme, it’s not surprising that smart meters are seen as something owned and controlled by energy suppliers rather than being something that you own. Customers are unlikely to know that they own this [data] asset. The big six aren’t going to tell them. We have given them all this data, now we need to give them a way to access it.”

BIOGRAPHY

Jenifer Baxter spent six years working for the Welsh Government as a waste strategy advisor. She was head of enterprise and innovation at the University of East London, and has been a research project manager at the University of South Wales specialising in advanced engineering and materials.

Jane Lucy spent six years working for the Welsh Government as a waste strategy advisor. She was head of enterprise and innovation at the University of East London, and has been a research project manager at the University of South Wales specialising in advanced engineering and materials.
Katie Black
Head of transport, energy and digital, National Infrastructure Commission

At the National Infrastructure Commission, digital, energy and transport come as a package and they are all under the aegis of Katie Black. What is the dividing line between energy and digital?

“Where it all comes together is in the home,” Black says. “You have a smart meter and smart heating controls and everything starts becoming much more digitally connected. Then it starts to interface with your communications, so it is on your smartphone.

“There is potentially much more space for more people to participate in the energy industry. So people talk about tech companies providing energy services, as opposed to your typical energy retailer. Then you start thinking about electric vehicles. What does that look like and who are the people who are selling that to you? You could end up having a supplier for your electric vehicle and one for your house. I think there is a lot of thinking to do about how we open up these industries so consumers are able to make the most of all these opportunities and get the best experience and deals.

“I do think the boundaries between energy and digital, and also with transport, will start to blur over time and you have lots of different business models that we haven’t really thought of yet. A lot of this technology is here now and I think there is a lot more that we could be doing to make that happen.”

“Something that we are trying to work out is what the mix [between centralised and decentralised] might look like. This move to decentralisation may not make sense from a system perspective. It may not optimise the way we decarbonise and therefore we should think about where you are encouraging [generation] on the system.

“Storage is another good example. Storage has to be put in the right place to provide the maximum benefits to the system, rather than putting it where it will actually impose costs on the network.”

Does that mean limiting the choices of those who want to invest? She says no, but if your choice is going to make things more expensive, “then everyone else shouldn’t pay for that – you should; that’s the principle we set out”.

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BIOGRAPHY
Katie Black joined the Department of Energy and Climate Change in 2011, after taking an MChem at the University of Leeds that included research on carbon capture and storage. She joined the National Infrastructure Commission in 2015, where she co-wrote ‘Smart Power’.

Sian Baldwin,
Chief executive, Xoserve

Sian Baldwin came fresh to the energy sector when she joined Xoserve as a non-executive director. Baldwin says the industry needs overarching governance of its data architecture and assets.

“For example,” she says, “we tend to tackle problems by duplicating data in more than one place. It’s an absolute crime to technology principles. And yet we do this all the time, so our architectural governance needs to be improved, our asset management as an industry needs to be improved and there should be conversations about the number of management teams, boards, governance committees that we have and whether all that really represents value for money for consumers.”

She adds: “If you built this from scratch you wouldn’t do it this way. I think that we do need to build a strategy so that even if we are not at the right end state, we have a collec-
tive strategy that naturally gravitates us towards the end state." It doesn’t have to be a big bang, she says, but over time costs in the centre of the markets can be reduced by having a strategy that gradually heads toward a simpler environment.

“Maybe we need an architectural strategy for the industry. We bring all the top architects together with Ofgem.” I suggest that is the kind of working group that would be used for other aspects of the industry’s evolution. Baldwin notes that: “For some reason the technologists are not engaged in the centre. If you took all of the companies it is the commercial person, the regulatory person, that is engaged in the middle.

“Technology people are nowhere. But they exist in all the different companies.”

Jo-Jo Hubbard,
Chief operating officer and co-founder, Electron

Electron uses blockchain technologies to design more efficient, resilient and flexible systems for the energy sector. Jo-Jo Hubbard says it wants entry to the procurement process for Ofgem’s faster switching programme.

“Building a faster switching service that is only for switching is 100% going to be a regret spend. It cannot possibly be future proof. It flies completely in the face of what Ofgem says about getting rid of the supplier hub model as well.

Hubbard suggests the industry has not thought enough about what it means to be able to offer granular service propositions for different types of people. When it comes to energy, “some enthusiasts would like to be able to trade their own energy and some would like the house to operate like a hotel, and there are millions of different approaches between them”.

She notes that one supplier splits its customers into one of six different types. But, “Amazon has hundreds of thousands”.

Hubbard warns that if the energy industry doesn’t work together to create a data structure that all its members can access, whether or not looks like her three platforms, “a single data owner is going to come and dictate it”. That means Amazon or other huge platforms like Google or Facebook, which already have value propositions around their own data and can add energy to the mix. She warns: “There is a threat for the energy industry – if you don’t get this right, somebody else will. Most of those big organisations have supply licences already.”

Vicki Spiers,
Chair, AIGT and CNA

In most new housing, utility connections are provided not by incumbent network companies but by independents. Their numbers have been growing. Vicki Spiers is the current chair of the industry bodies
Lisa Waters,
Consultant, WatersWye

As a consultant, Lisa Waters represents a variety of companies on industry bodies and works with them on industry issues. They are typically businesses with a single focus – merchant generators, independent suppliers and other electricity players that are not vertically integrated.

There are a lot of current industry issues that affect them, but what is the most important? Waters has a “big picture” answer, saying it is “this idea of a level playing field and how you create that”.

It’s a cry I have heard many times and Waters says there is a genuine wish for it, and not just from her clients: “The majority of people we speak to in the energy market are very happy to have a level playing field – but there is a lot of levelling to do. It’s difficult to level the playing field when every form of generation gets some kind of subsidy. Everything we try to do is against a background of the other support mechanisms in place.”

The subsidy regime is the background to any investment decision, yet it does not provide any certainty about the future of the market, she says. “Unless you do have a subsidy it’s hard to see any investors investing. You couldn’t build a merchant plant based on just getting wholesale prices in the electricity market because you don’t know how much they are going to run.”

BIOGRAPHY

Lisa Waters has a BSc and an MSc in environmental economics from University College London. She was energy policy adviser at the CBI. She was a director at the Energy Intensive Users Group and later independent gas supplier V-is-on Gas and Dynegy. In 2002 she became a founding member at consultancy WatersWye Associates. She is an industry expert on the Imbalance Settlement Group under the BSC.
Nicola Waters,
Chief operating officer, Push Energy

Nicola Waters identifies the two biggest technical issues for developers as freeing up capacity on the network and managing assets connected to the network.

“Freeing up capacity is going too slowly,” she says, mainly because DNOs have little leverage and developers see value in holding on to existing connections. “It’s different when a developer is genuinely trying to do something with the capacity, but it’s hard for the DNOs to differentiate between the projects that are progressing and the ones that are not.”

“From a developer’s perspective, you know there is some value in that [connection]. You want to hold on to it and genuinely try to do something with it. It’s just that the industry has changed and it takes a long time.”

Managing existing assets that are connected to the network is an important topic in the distributed generation community and is perhaps “the single biggest thing that everyone in the DG community asks me.” Connection offers, and the connection agreements that follow, broadly explain that there may be interruptions or constraints to export and import connections. Often these agreements make reference to certain circuits on the DNO or transmission networks, but the frequency and duration of interruptions and constraints are not fully explained. Also, Waters notes, if you are able to carry out a network study, “these are out of date very quickly, because it is an ever changing situation, you don’t know what new assets are going to be connected to the network in future”.

Allison Roche,
Energy policy officer, Unison

Unison the union has 1.3 million members working in the public services, which include private contractors providing public services and utility companies. In covering energy, its policy officer Allison Roche balances support for members who are workers in the energy industry with those who are simply customers.

Roche is concerned that there is little public understanding and discussion of energy, and as a result no opportunity to build a strategy.

“The problem is that there needs to be lots of new infrastructure and no-one is willing to pay for it. But no-one talks about that and it’s not just frustrating for unions. It annoys the big six just as much, because they don’t feel there is a clear strategy,” Roche says. She wants to see a committee that would bring together BEIS, civil servants, representatives from construction and the energy industry, trade union representatives etc. “The idea is to pull policy together and report back to the minister,” says Roche.

Although Roche welcomes the so-called ‘municipalisation of energy’ and local authority suppliers, she doesn’t see them as the solution to this problem.

“Municipal supply of energy is really too small. It can all sound great, but for us as a trade union there are issues that are important for people as well. The larger employers have really good terms and conditions, skilling programmes and apprenticeships. Hinkley Point C, for example, works very well to provide engineering jobs.

“Smaller local organisations won’t have those high skills – so they are not the total solution to provid-
ing a highly skilled green economy.” In fact, she is concerned that overall, a shift from a few large energy companies to a large number of small ones may result in a de-skilled and less well-protected workforce. Some small companies may not recognise unions, for example.

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Gillian Cooper,
Head of retail energy markets, Citizens Advice

Gillian Cooper has been a consumer advocate in the energy sector for more than ten years, working in a number of watchdog organisations. While customer services, complaints handling, trust and tariff proliferation are still on the agenda, she thinks two things will emerge as new issues over the next few years. The first is “challenges around network charges in the future, with more households with PV [photovoltaics] and battery storage. Where do the costs fall? The big risk is a market that gets more and more segmented so you have some households who are able to engage, get really good deals, take advantage of all the initiatives and their costs start falling away. And then you have a rump of households who are unable to engage and are being landed with larger and larger costs because they can’t afford the new appliances and the new tools... how do you protect those people and make sure they don’t pay disproportionate costs?”

Her other example is heat, where she says “it is important to keep regulatory protections under review because they are quite different. As it grows in importance you need to have far more consumer protection in there”.

Heat is location-specific and “the difficulty is that once the contract is signed you can’t get out of it. There probably needs to be more disclosure so people know what they are signing up to. When the costs don’t come in as expected – which we have seen in a few developments where costs are much higher – that’s a real problem.”

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Sharon Darcy,
Director, Sustainability First

Sharon Darcy is leading Sustainability First’s New Energy and Water Public Interest Network (New-Pin) work on resilience. She says energy suppliers should be talking to customers now. That is because: “In a competitive market you might have shorter-term relationships. In a more disaggregated market the more potential you have for weak links at the boundary.

“There is less of a relationship and there are new energy suppliers who may not be thinking this is part of their responsibility – [they] assume the wires and power are always there.” But she says that’s not good enough, because “if they come into this market they have to be absolutely signed up to what they are delivering: this is an essential service that people rely on to power their lives and homes and at the most basic keep them alive.”
“To get the social licence to operate in this market, whether you are a supplier or a DNO or a generator, you have to realise there are social and environmental externalities you have to be sensitive to.

“Just providing good customer service and billing on its own isn’t enough. You might be able to get round it by forming joint ventures and relationships with other companies who can bring in that experience. But in a market system, that flexibility is really important when you are trying to bring in resilience and at the same time drive down costs.

“If [new energy supply companies] give too much focus to short-term returns and short-term gains, and the need to be a responsive long-term company isn’t taken into account, that will be an issue.”

Mary Teuton, Former head of policy and regulatory strategy, VPI Immingham

Mary Teuton expects people joining the industry now will have a very different view of it, compared to people who have been around for decades.

“[There are] a lot of people who have been in the industry a long time and are very knowledgeable. And there are new people coming through with a new way of thinking and challenging how things have been done. I don’t know which is right. By 2030 I think we’ll have a system that is markedly different than ours, but recognisable. By 2050, it won’t be recognisable.”

Catherine Mitchell, Professor of Energy Policy, University of Exeter

Catherine Mitchell thinks Electricity Market Reform needs to be rethought, and the industry restructured. Mitchell does not believe the energy industry can face its current transformation at arms length from government – and with a regulator that is also at arms length from policymaking.

She believes it can evolve more flexibly under a new governance process which provides legitimate political direction. “I know no-one will want this”, Mitchell acknowledges, “everyone has been working on this [EMR] since 2010. And at first I was quite optimistic, but it has ended up primarily as a vehicle for nuclear power. It’s been going on for a long time and it’s terrible for the industry [to change direction]. But we are just throwing good money after bad.”

She says that there is largely consensus on where the industry is going - legislation commits the UK to cut carbon emissions by 80% by 2050. But her fear is that the UK’s current institutional framework is not flexible enough to accommodate the changes that will hit the UK in the coming years.

Mitchell outlines the changes that the UK has to accommodate: “We need a new mindset for both system actors and stakeholders. We need a fundamental rethink of the role of the regulator, system operator, utilities, networks and market. We need a bottom-up system that is accessible for customers and incentives to make it easier for new entrants to become involved. And we need to stop taking energy policy decisions that we know won’t lead to our goals”
Lucy Symons,
Director of public policy, Open Energi

Today, perceptions and understanding of demand flexibility are changing rapidly. This is being helped by massive advances in renewables penetration, plummeting costs of storage and a world increasingly shaped by our ability to connect and control anything from anywhere.

Open Energi believes this connectivity – and the economic benefits it unlocks – is the biggest long-term driver for flexible demand. Even without the climate imperative, the digitalisation of energy means we can finally start to address some of the fundamental inefficiencies created by a system built for peaks. By intelligently shifting demand in real time we can flatten the demand curve and maximise our use of existing infrastructure. The resulting efficiency gains can unlock huge savings for consumers."

“Businesses are naturally wary of anything that will change the pattern of consumption of an asset for something other than its intended purpose. To get more businesses involved, it is vital we continue to educate companies and show them that it is possible to automate this type of technology without disrupting processes or behaviours. It’s going to take time because it is a big shift in mindset that’s needed – not just for energy managers, but also for engineering and operational teams, who are being asked to become active participants in a rapidly changing energy system."

Barbara Vest
Director of generation, EnergyUK

“Great Britain has for many years provided international leadership in tackling climate change, and Claire Perry MP’s recent announcement of the Powering Past Coal Alliance at COP23 is reflective of this. As positive as this global alliance and international leadership is, there remain lost opportunities – for both the environment and the consumer – much closer to home. The least cost low-carbon technologies still lack a route to market and the rollout of energy-efficiency measures is lacking in the ambition set out in the 25 Year Environmental Plan.

The Industrial Strategy made some positive moves towards making sure the UK is prepared for a world of electrified transport, but the last hurdle in decarbonisation remains – heat. We are approaching critical junctures where decisions must be made on the future of gas and the decarbonisation of heat.”

Louise Dalton
Senior associate, CMS

Storage is the hot topic in the UK electricity industry at present. The benefits that the broad range of technologies can offer a variety of industry participants, from system and network operators to individual consumers, have been widely discussed and recognised. However, challenges remain for new-build storage projects.

There is no specific revenue support available for energy storage in the UK, although limited research and development funding is available from a number of authorities. As a result, developing a viable business case is more complex than has been the case for renewable generation technologies. This can require “stacking” of revenue streams, such as ancillary services revenues, capacity market payments, Triad benefits and other embedded benefits. However, some of the available revenue streams prevent the provision of multiple services simultaneously, thereby making the raising of the initial capital more challenging. Further, a number of benefits that energy storage projects can offer, such as the deferral of network reinforcement, are not yet formally monetised.
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