Building the grid for renewable growth

Following the opening of Hitachi Energy's new Engineering Centre of Excellence in Glasgow, PES Wind spoke with Laura Fleming, UK & Ireland Country Managing Director at Hitachi Energy, to explore the infrastructure, technology and skills needed to support the next phase of renewable energy growth. With electricity demand rising and renewable generation accelerating, she shares her perspective on Scotland's role in the energy transition, why grid investment is critical and how collaboration across the sector will shape the future energy system.

PES: Thank you for joining us Laura. Following the opening of Hitachi Energy's new Engineering Centre of Excellence in Glasgow, what does this investment represent for the company and the wider energy transition?

Laura Fleming: Thank you. It's a really important moment for us. This investment represents our long-term commitment to the UK and Scotland, which is key to the UK playing a leading role in the energy transition.

The scale of change we're seeing across the energy system is unprecedented and this centre is about building the capability needed to deliver that transformation. It strengthens our engineering capacity, supports the development of critical skills, and places us closer to where much of that change is happening.

It means we are closer to our key customers and projects in Scotland and the North of England, continuing to support the delivery of infrastructure needed for a more secure, sustainable and resilient energy system.

PES: The opening comes at a pivotal time for the UK energy transition. Beyond the Glasgow facility itself, what do you see as the biggest opportunities and challenges facing the electricity network over the next decade?

LF: We're at a real inflection point. Demand for electricity is rising rapidly, driven by everything from AI and digital infrastructure through to the electrification of transport and heating.

At the same time, we need to accelerate the integration of renewable energy, which creates both opportunity and significant complexity.

The challenge is ensuring that infrastructure development keeps pace with ambition. The Glasgow centre is designed to help address that by supporting the delivery of critical grid infrastructure, strengthening engineering capability and helping us move at the pace required.

Because while ambition matters, delivery is what will ultimately define success.

PES: Scotland is playing an increasingly important role in the UK's renewable energy ambitions. What makes it such a strategically important location for investment in energy infrastructure?

LF: Scotland plays a hugely important role in the UK's energy transition. The scale of renewable energy being developed here, particularly offshore wind, places it right at the centre of the future energy system.

But beyond that, it's about people. Scotland has an exceptional talent base, world-class universities and a strong heritage of engineering and innovation.

For us, this is about being close to both the opportunity and the capability, supporting major projects while also investing in the skills needed to deliver them long-term.

PES: As renewable generation continues to grow, what do you see as the biggest barriers to connecting new wind capacity and ensuring the grid can support future electricity demand?

LF: The biggest challenge is scale and our ability to deliver at pace.

We're seeing incredible ambition, particularly in offshore wind, but translating that into operational infrastructure depends heavily on the grid. Without the ability to connect and distribute that energy effectively, we risk slowing progress.

There are also challenges around supply chains, skills and long-term planning. Addressing those will require greater collaboration across industry, government and the wider ecosystem.

PES: Offshore wind is expected to play a major role in Europe's future energy mix. From your perspective, what are the biggest challenges the industry must address to accelerate deployment at the pace required?

LF: The opportunity for offshore wind is significant, but success depends on the wider energy system working together.

We need the right infrastructure, investment and coordination to ensure projects can move from ambition to delivery. This includes strengthening supply chains, developing the necessary skills base and ensuring grid capacity is available when and where it is needed.

The transition requires a long-term view and a more coordinated approach across the whole sector.

PES: Grid infrastructure is increasingly being recognised as a critical enabler of renewable energy growth. How is that conversation evolving and where do you see the biggest opportunities for progress?

LF: There's been a real shift. The grid is now firmly recognised as the backbone of the energy transition.

We're moving from seeing it as a constraint to understanding it as a key enabler of economic growth, energy security and decarbonisation.

The opportunity now is to accelerate investment, adopt more long-term and programmatic approaches, and ensure we're building infrastructure that is both resilient and fit for the future.

PES: Technologies such as HVDC, digital substations and advanced grid management systems are becoming increasingly important as renewable generation scales. Where do you see the biggest opportunities for innovation over the coming decade?

LF: At Hitachi Energy, we'll continue to see major advances in grid technologies as the grid not only expands but modernises, particularly in areas such as high-voltage direct current (HVDC), power electronics devices to stabilise the network, digitally enabled services and system integration.

These are critical to enabling large-scale renewable integration and ensuring flexibility and resilience across the system.

But alongside technology, innovation in how we plan, procure and deliver infrastructure will be just as important in meeting future demand.

The future needs a completely new way of thinking, and a diverse approach to creating the future energy system for generations to come.

PES: Innovation relies on collaboration as much as technology. How important are partnerships with education providers, research organisations and policymakers when developing the workforce needed for the energy transition?

LF: It's absolutely fundamental. Innovation doesn't happen in isolation; it relies on strong partnerships across industry, academia and government.

That's one of Scotland's real strengths, along with its engineering heritage. We're already working closely with organisations such as the University of Strathclyde and Edinburgh Science to support skills development and encourage more people into energy and STEM careers.

This centre reflects that approach. It's an investment not just in technology, but in people and long-term capability.

PES: Talent remains a major talking point across the industry. How can organisations work more effectively to develop the workforce needed to deliver the energy transition?

LF: It comes down to stronger alignment and long-term thinking. We need closer collaboration between industry, education providers and policymakers to ensure training and skills development reflect the needs of the energy system we're building.

There is huge growth and opportunity across multiple adjacent sectors, but it involves creating clearer pathways into engineering and STEM careers, investing in apprenticeships and reskilling, and making the sector more accessible and attractive to a broader and more diverse talent pool.

Partnerships are key because no single organisation can address the skills challenge alone.

PES: As supply chains become increasingly important to project delivery, what lessons can the wider industry take about resilience, localisation and long-term planning?

LF: Recent years have highlighted the importance of resilience and forward planning. Supply chains need to be more robust, more localised where possible and better aligned with long-term demand.

Localisation will be particularly important for engineering services, which is part of the logic for opening the Glasgow office.

That means greater visibility across projects, earlier engagement with suppliers and more coordinated planning across the industry.

We have made fast progress, but building resilience will be critical to delivering projects at the scale and pace required for the energy transition.

PES: Collaboration is frequently described as essential to achieving net zero goals. Where do you believe the strongest partnerships need to be formed to unlock the next phase of renewable energy growth?

LF: The strongest partnerships need to span the entire ecosystem: industry, government, network operators, academia and supply chains, as well as adjacent industries.

Delivering net zero is a complex challenge that requires shared ambition and coordinated action.

Whether it's accelerating grid development, building skills or driving innovation, collaboration is what enables progress at pace.

PES: Looking ahead, which developments do you believe will have the biggest impact on the future of wind energy and the wider renewable energy system?

LF: I'm particularly focused on how we scale delivery, whether that's offshore wind deployment, grid expansion or system integration.

We're also seeing increasing demand from electrification and digitalisation, which will place even greater importance on flexibility and resilience within the energy system.

The pace at which we can translate ambition into delivery will be one of the defining trends over the coming years.

Laura Fleming

PES: Finally, when you consider both the Glasgow investment and the wider direction of the industry, what gives you the greatest confidence about the future of the energy transition?

LF: What gives me confidence is the level of ambition and commitment we're seeing across the sector, from governments, industry and communities.

We're seeing this through investments in new facilities like our Glasgow centre, in Stafford and globally, but also through investment in people and the creation of new jobs.

There's a clear recognition of both the challenge and the opportunity, and real momentum behind delivering change.

Investments like our Glasgow centre are part of that story, building the capability, skills and infrastructure needed to turn ambition into reality and deliver a more sustainable energy future.

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