Port Electrification Conference 2026: key takeaways

Jonathan Croley, Partner in our commercial team spoke about the legal and commercial considerations surrounding port electrification and decarbonisation. Drawing on his experience, and that of the wider firm, in advising over 100 UK ports and harbours and delivering major energy infrastructure projects, he focused on three key areas: procurement, grid capacity and the role of policy and regulation in supporting port decarbonisation.

His presentation highlighted that successful port electrification is not solely a technical challenge. Ports must navigate procurement obligations, grid constraints, energy supply arrangements and regulatory requirements while ensuring that projects remain commercially viable and deliver long-term value.

Here are our key takeaways.

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Key takeaways

1. Procurement can be a strategic advantage

Whilst procurement processes can be seen as burdensome, a well-structured Procurement Act-compliant process can help ports drive competition, secure better solutions and ensure deliver the operational objectives and value-for-money.

2. Grid capacity remains a critical barrier

Access to grid connections, reinforcement works, delays and uncertain upgrade costs continue to present significant challenges for port electrification projects. There are indications that ports may be prioritised for future grid connections and reinforcement works, but further government guidance is awaited.

3. Electrification does not automatically equal decarbonisation

Jonathan emphasised that grid electricity is not currently zero-carbon. Ports therefore need to think beyond electrification alone and consider the carbon intensity of their electricity supply.

4. Virtual Power Purchase Agreements (PPAs) could offer a solution

Virtual PPAs were highlighted as a valuable tool for ports. These long-term agreements can:

- Provide a long-term hedge against electricity prices.
- Support investment in renewable energy projects.
- Help ports access greener electricity supplies.

In a subsidy-free environment for many renewable sources of energy, virtual PPAs are a key way in which developers of renewables can show their funders that their project is "bankable". In this way, credible and creditworthy ports could help drive the deployment of further renewables in the UK through virtual PPAs.

5. On-site generation presents a major opportunity

Where grid capacity is limited, ports should explore on-site generation and energy storage solutions. Increasingly, fully-funded models are available, enabling ports to upgrade infrastructure and improve energy resilience without significant upfront capital expenditure.

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Key takeaways

6. Ports need to understand the legal implications of energy generation

Ports considering on-site generation and electricity supply must:

- Ensure they have the legal powers to generate and sell electricity.
- Understand Electricity Act licensing requirements.
- Structure projects carefully to avoid regulatory and licensing issues.

7. Shore power adoption requires the right commercial model

Merely investing in shore power charging is not enough: ports should look to drive the usage of that infrastructure, and look at:

- Offering vessel operators competitive and predictable pricing, which in turn requires the ports to secure long-term supplies of electricity at a stable pricing.
- Potentially requiring vessels to use shore power when berthed, where appropriate.

8. Carbon regulation will help drive demand

The extension of the UK Emissions Trading Scheme (UK ETS) to domestic shipping is expected to encourage emissions reductions across the sector and increase the attractiveness of shore power and other low-carbon energy solutions for vessel operators.

9. Energy efficiency should not be overlooked

The cheapest and greenest kilowatt hour is the one that is never used. Alongside major infrastructure projects, ports can achieve meaningful carbon and cost savings by reducing unnecessary electricity consumption and implementing energy efficiency measures such as LED lighting and utilising heat pumps to heat warehouses, and

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Summary

Port electrification presents significant opportunities, but success will depend on overcoming challenges around grid capacity, procurement, funding and regulation. The discussion highlighted the importance of early planning, collaboration and commercially viable energy solutions, from shore power and on-site generation to long-term renewable energy agreements.

For ports, operators, energy providers and policymakers, the key takeaway is to engage early, work collaboratively and begin planning now. By taking a proactive approach to decarbonisation and energy resilience, the sector can accelerate the transition while ensuring investment delivers long-term operational and environmental benefits.

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