

## Briefing

# Interconnectors and their role in establishing energy security

**Deloitte.**

The continued focus on energy resilience, security and supply in combination with green energy generation and transmission has boosted the European and wider global interconnector market.

Interconnectors are an important tool for establishing energy security because they allow countries to access a broader range of energy sources, diversify their energy mix, and mitigate supply disruption.

As governments strive to achieve their net zero goals, interconnectors have a big role to play in helping to increase access to greener and cheaper energy, reinforcing their significance for the decarbonisation agenda, both nationally and globally.

We'll be releasing a series of articles over the next few months to help keep you informed of the opportunities and challenges facing this growing sector.

## What's needed to develop the interconnector market?

An interconnector is a physical electricity cable or gas pipeline which joins together energy networks in different countries, often for the first time. Interconnectors enable electricity or gas generated or sourced in one country to be transmitted to another country as demand and supply requires. Key to their success story is that energy can be transmitted either way, increasing energy resilience for individual countries by expanding their capacity to import or export electricity or gas beyond traditional 'home' markets

The technology is fast evolving given its success, extending beyond the traditional point-to-point (P2P) interconnectors towards multi-purpose interconnectors ("MPIs"), which will allow for coordination with offshore wind to create 'green energy' hubs.

The move towards MPIs is an exciting development. From a UK perspective extending traditional point-to-point interconnectors to allow for connection to new offshore wind generation is obviously of real relevance in managing the terrestrial energy infrastructure and in the context of the UK's target of achieving 50GW of offshore wind by 2030.

**Regulatory:** Whilst a regulatory regime exists for P2Ps, the evolution of MPIs requires careful consideration of the appropriate regulation to balance expectations of the offshore wind industry and transmission developers respectively. For example, in the UK, the operation of the cap and floor funding regime and allocation of operational risk will need to be considered where there is multiple use of an interconnector asset.

**Technology:** As interconnectors are extending in length and depth in marine environments cable technology continues to develop in order to expand capacity and technology choice in the market. We have seen this in recent years by the increased use of cross-linked polyethylene (XLPE) cable technology as an alternative to the use of more traditional mass impregnated (MI) for offshore high voltage direct current (HVDC) cables.

**Job creation and skills development:** Interconnectors can generate sustainable employment opportunities across countries.

For example:

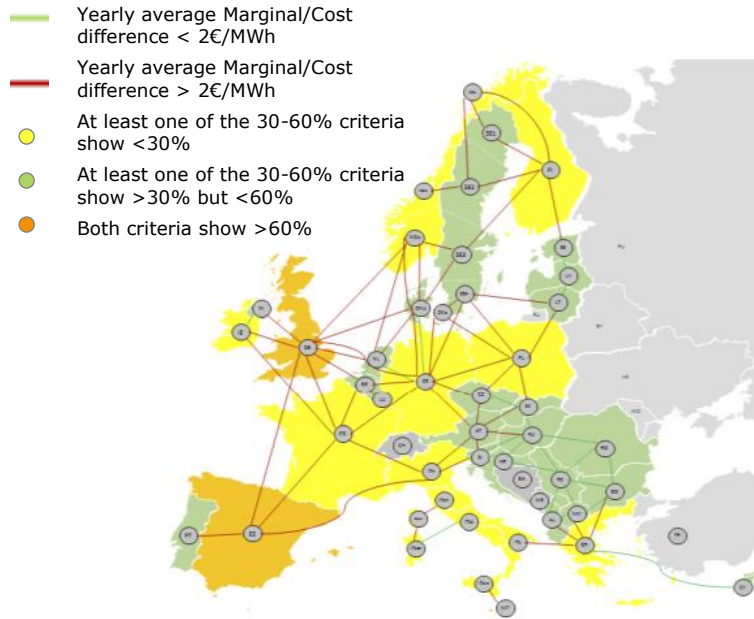
- The North Sea Link has created 2,700 high quality jobs, Viking Link has created 3,000 roles and Nemo Link a further 1,400

- Xlinks estimate that their proposed UK to Morocco interconnector will also create thousands of regional, green jobs including through creation of new HVDC cable manufacturing facilities in the UK and shipbuilding for their cable laying vessel.

The energy workforce will need to grow significantly to be able to support the substantial infrastructure upgrade and expansion programmes of the coming decades.

In order to support achievement of future energy transition challenges, companies will need to consider their [workforce strategies](#) and start to develop the ship crews, crane and drilling operators, and engineering capabilities including industrial, mechanical, naval, telecom and computer engineering expertise. Given the sharp increase in demand for these skills over the next five years, competition for talent will intensify as projects other than offshore wind, which require similar skills, move into the development phase. This sector will benefit from the unforeseen and unrealised value of a EU energy network as new energy hubs emerge at interconnector terrestrial locations.

## Interconnector market size



By 2030 over 40GW of additional interconnector capacity is currently planned to be operational in Europe, a significant proportion of which is expected to involve connection with the UK.

With the UK Government having set a target of 18GW of interconnector capacity by 2030, this would represent a near doubling of the currently installed 8.4GW of capacity.

However, with the emergence of new projects such as X-Links' proposed 3.8GW UK to Morocco interconnector setting records for interconnector length at 3,800km, the ability for the supply chain to accommodate the continued growth of the market will be a key factor in determining the scale of the sector by 2030 and beyond.

## Conclusion

With investment in skills and technology and regulatory development, interconnectors will play a vital role in establishing energy security by facilitating the sharing of electricity and gas and promoting the integration of renewable energy sources.

## Contacts

David Jones  
Partner, Construction Litigation  
D: +44 121 232 1176  
[davidjoneslit@eversheds-sutherland.com](mailto:davidjoneslit@eversheds-sutherland.com)

Alison Mallard  
Senior Associate, Construction Litigation  
D: +44 1223 44 3739  
[alisonmallard@eversheds-sutherland.com](mailto:alisonmallard@eversheds-sutherland.com)

Liz Wells  
Assistant Director | FA - Real Assets Advisory |  
Deloitte LLP  
D: +44 113 292 1159  
[lswells@deloitte.co.uk](mailto:lswells@deloitte.co.uk) | [www.deloitte.co.uk](http://www.deloitte.co.uk)

Will MacLeod  
FA - Advisory Corporate Finance |  
Deloitte LLP  
D: +44 20 7007 3795  
[wmacleod@deloitte.co.uk](mailto:wmacleod@deloitte.co.uk) | [www.deloitte.co.uk](http://www.deloitte.co.uk)

## Further reading

- [Energy Transition Series - Interconnectors and Energy Security \(Presentation\) - Eversheds Sutherland \(eversheds-sutherland.com\)](#)
- [The net zero workforce: Power, Utilities & Renewables | Deloitte UK](#)
- Sources: <sup>4</sup>National Grid (ESO Interconnector register), <sup>5</sup>Ofgem (Electricity Interconnectors), <sup>6</sup>BEIS (The White Paper)

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