

Offshore Wind: UK experience, Asian opportunity



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Offshore wind is a success in the UK

Mother nature –

- World class resources
- Large shallow seabed
- Ports
- People

Stable & clear policies –

- Government vision
- Public support
- Policy structures
- Financial certainty

Expertise from –

- Energy / Grid
- Engineering
- Legal / finance
- Insurance
- Oil and gas
- Engineering
- Environmental
- Marine
- Port

- 10 GW installed
- 30 GW + target





UK regulatory setting: offshore renewables

Land rights	Consents to build and operate	Transmission	Auctions for support
<p>The Crown Estate (TCE) & Crown Estate Scotland (CES)</p> <ul style="list-style-type: none"> • Leasing rounds • Statutory obligations • Stakeholder interests • Active management of seabed 	<p>Government</p> <ul style="list-style-type: none"> • Planning authorities • Regional marine plans • Statutory advisors 	<p>OFTO / Ofgem</p> <ul style="list-style-type: none"> • Electrical infrastructure • Developer or Generator build • OFTO auctions • System Operator • Onshore grid integration 	<p>Government</p> <ul style="list-style-type: none"> • Energy Policy objectives • Competitive tender for Contracts for Difference (CfDs)



Private Sector / Developers

How UK government supports offshore wind in Asia

Key markets for offshore wind in APAC – Taiwan, South Korea, Japan and Vietnam

Taiwan is the most advanced market – but all have a healthy pipeline of projects in development

UK working with governments, regulators, developers and suppliers across APAC to progress the industry's development

The UK has seen the full life cycle of the industry – from policy evolution, leasing of sites, project development, construction, O&M right through to decommissioning of the earliest projects

Key UK institutions, such as Crown Estate, have hosted visits and continue to share expertise with governments, energy agencies and other stakeholders across the region

Often it is practical challenges where sharing knowledge has been of most value – fisheries, cable crossing, marine navigation, consenting

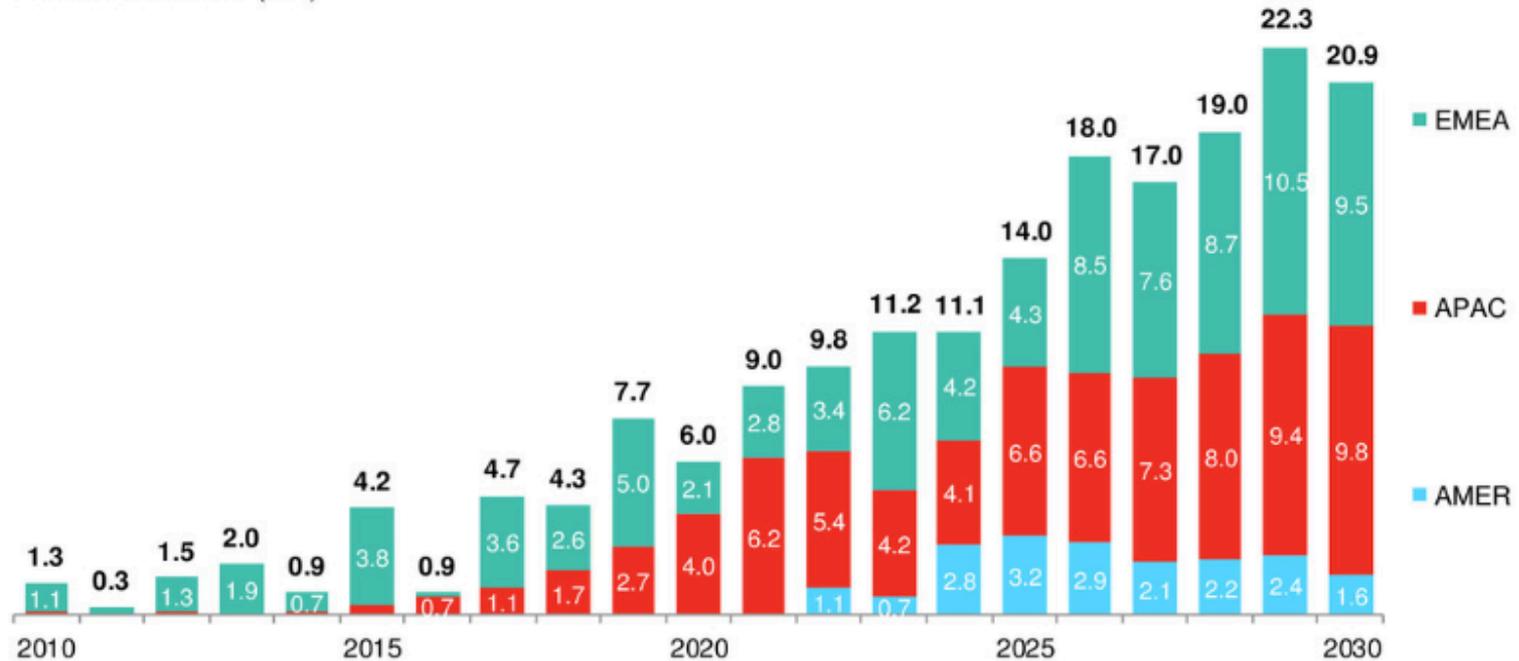
Department for International Trade is working to connect experienced UK OSW businesses with developers and partners in ASIA

UK Export Finance (UKEF) can provide long-term finance (up to 18 years repayment terms) in most Asian currencies

UKEF supported the Formosa 2 offshore wind project in Taiwan, Taiwan's largest windfarm.

Figure 3: Global offshore wind installations, by region

Annual installations (GW)



Source: BloombergNEF.

Figure 4 ranks countries based on projected capacity in 2030. In total, we expect 15 markets to breach the gigawatt mark by 2030. China is seen taking top spot, followed by the U.K. and Germany. By the end of the next decade, we expect France, Japan and South Korea to leapfrog Denmark – home of the first offshore wind farm in 1991. The U.S. is on course to be the fourth-largest market in 2030, with 18.9GW of installed capacity, up from only 30MW today.

ASEAN Low Carbon Energy Programme: Capacity-building support for Offshore Wind in ASEAN

Financing of offshore wind farms

UK created government backed Green Investment Bank to support deployment of first offshore wind farms that were (then) seen as high risk by commercial banks.

UK has developed CfD framework for offshore wind that has driven down the price and level of support needed for offshore wind.

The LCEP will bring experts in the financing of offshore wind in the UK to engage directly with policy makers and stakeholders in the ASEAN region.

Offshore grid

Development of the offshore grid is often a key barrier to the deployment and financing of offshore wind. The UK has developed a regulatory framework to overcome these barriers.

The LCEP will bring experts in the development of the UK regulatory regime to engage directly with their regional counter-parts.

Domestic supply chain

The UK has developed a strong domestic supply chain for offshore wind, building on its existing marine and oil and gas infrastructure.

The LCEP will support ASEAN governments to understand the steps, and government support, needed to develop a domestic and regional supply chain for offshore wind.

ASEAN Low Carbon Energy Programme: Capacity-building support for Offshore Wind in ASEAN

The UK is a world leader in the deployment of offshore wind. Getting to this position has required a ‘whole of economy’ approach – policy, finance, technology, grid, supply chain.

ASEAN countries that are beginning to look at offshore wind can learn lessons from the UK experience to inform the development of the industry in this region.

Through roundtables and workshops the LCEP is engaging directly with governments (and other stakeholders) in the region to help them understand the UK offshore wind success story in detail and identify which elements are relevant for their domestic market.

Cheapest Energy Generation Technology By Country

2014

Coal	Gas	Wind	Solar
Belgium	Algeria	Denmark	
Bulgaria	Argentina	Germany	
Chile	Australia	Uruguay	
China	Brazil		
France	Canada		
Greece	Egypt		
India	Israel		
Indonesia	Mexico		
Italy	Peru		
Japan	Philippines		
Malaysia	Russia		
Morocco	Saudi Arabia		
Poland	U.S.		
South Africa	UAE		
South Korea			
Spain			
Thailand			
Turkey			
U.K.			
Vietnam			

2019

Coal	Gas	Wind	Solar
Indonesia	Algeria	Argentina	Australia
Japan	Belgium	Brazil	Chile
Malaysia	Bulgaria	Canada	Egypt
Philippines	Greece	China	France
Poland	Russia	Denmark	India
South Korea		Germany	Israel
Thailand		Mexico	Italy
Turkey		Morocco	Saudi Arabia
Vietnam		Peru	South Africa
		U.K.	Spain
		U.S.	UAE
		Uruguay	

2024 ?

Note: Reflecting the cheapest benchmark project for each technology and market.
Source: [BloombergNEF New Energy Outlook](#)