Wave energy An abundant, untapped renewable resource

Harnessing wave energy will provide **over 20% of the UK's electricity demand** and is highly complementary with wind and solar.¹

Wave energy is the world's largest untapped energy resource with over 29,500TWh potential, ten times more than Europe's annual electricity consumption.

CorPower

Wave energy can decarbonise offshore industries and infrastructure and supports a secure and cost-effective net zero transition.





Wave energy for net zero



Wave energy optimises the energy system

The intermittency of wind and solar is complemented by wave energy, providing consistent renewable output. 2



Wave energy enables a cost-effective net zero transition

Deployment of 6GW of wave energy will reduce the UK's energy system cost by £1bn per annum.³



Wave can co-locate with offshore wind

This will deliver a saving of over 12% in the Levelised Cost of Energy for both projects. Orsted is working with Wave Piston to explore this potential.⁴



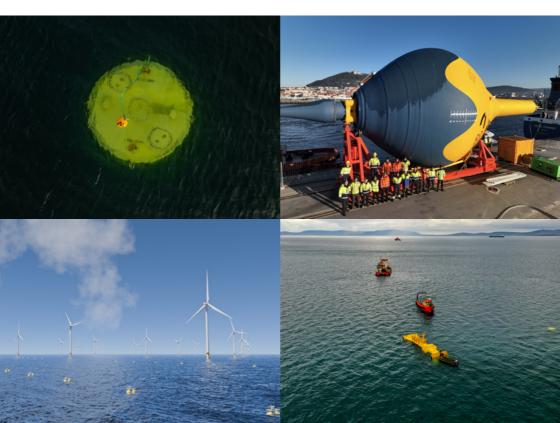
Wave energy can decarbonise offshore industries

Shell, TotalEnergies and BakerHughes have all invested to utilise wave power for subsea assets and offshore operations.⁵



Wave energy is abundant

With the potential to provide electricity for 500m homes whilst supporting 400k jobs globally.



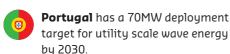
The UK has been at the forefront of developing wave energy...

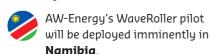
Funded by the Scottish Government, Wave Energy Scotland has delivered **131 projects** on time and within budget, providing over 132 contracts worth £50m to 300 organisations. It is internationally recognised for excellence and the WES model allows wealth to be built and retained for the UK.





The **USA** is investing \$152m over the next five years to advance the commercial readiness of wave energy.





ESB has partnered with CorPower to deploy a 5MW wave energy array in **Ireland**



China enshrined the 'large-scale deployment of ocean energy' in its five-year plan and in 2023 deployed its first full scale wave energy converter.



Spain is targeting 60MW deployed ocean energy capacity, including wave energy, by 2030.⁶



Since 2023, **Israel** has harnessed the power of its waves via Eco Wave Power's EDF One Project.



The **UK** can still lead this global market and add **£23bn GVA** to its economy.⁷

- 1 EVOLVE (2023) A review of practical deployment locations for European ocean energy projects.
- 2 University of Edinburgh (2023) What are the UK power system benefits from deployments of wave and tidal stream generation?
- 3 University of Edinburgh (2022) What is the value of innovative offshore renewable energy deployment to the UK
- 4 OWC Ltd (2023) Wave and Floating Wind Energy, Opportunities for Sharing Infrastructure, Services and Supply Chain.
- 5 Energy Voice (2024) Shell joins wave power subsea project off Orkney.
- 6 Ocean Energy Systems (2021) Spain: Supporting Policies for Ocean Energy
- 7 University of Edinburgh (2022) What is the value of innovative offshore renewable energy deployment to the UK economy?

The UK Government must act to seize the wave energy opportunity.

The industry is committed to working with the Government to realise its ambition to make the UK a clean energy superpower.

The Government can realise the UK's wave energy potential by:



Establishing a £5m wave energy ringfence in its renewable auctions.



Supporting the co-location of wave and wind projects.



Setting a 300MW wave energy deployment target for 2035.



Providing innovation funding to attract international investment.



Marine Energy Council Lead Partners



























For further information:

r.arnold@marineenergycouncil.co.uk marineenergycouncil.co.uk