



**UK MARINE  
ENERGY COUNCIL**

## **Tidal stream energy**

Tidal stream energy harnesses the power of the gravitational pull of the Earth, Moon and Sun.

Tidal stream turbines capture the kinetic energy of the currents that flow around coastal areas (unlike tidal lagoons or barrages, which require large barriers to be built).

## **Predictable renewable energy security**

Predictability will become increasingly important as the UK transitions to net zero. Tides flow irrespective of whether the sun is shining, or the wind is blowing.

The UK has over 11.GW of tidal stream capacity, equivalent to 11% of its current electricity demand.

The industry is growing with 70 MW forecast to be deployed in UK waters by 2028.

## **Global tidal stream capacity over 100 GW**



# Tidal energy supports a secure and cost-effective transition to net zero



© Atlantis Energy tidal turbine installation at Meygen, Calthness



The UK has a strong tidal stream resource matched with the necessary maritime expertise to realise this potential.

Harnessing the power of our tides will unlock multiple benefits:

## Tidal stream will slash costs like wind and solar

Projected to be cheaper than new nuclear by 2035 and now £50/MWh by 2050.

The Offshore Renewable Energy Catapult forecast tidal stream will achieve this cost reduction through economies of scale and volume, and continued innovation.

## Reduce energy system cost

Modelling by the University of Edinburgh has demonstrated that 6.2 GW of tidal stream deployment by 2050 would lead to a reduction in the annual dispatch cost from £13.5 bn to £12.5 bn.

## Support energy security

Due to tidal stream's predictability, it can directly replace the role that fossil fuel baseload generation currently plays in the UK's energy mix. Modelling carried out by Imperial College London demonstrated that tidal stream alone could reduce the UK's required gas capacity by over 40%, from 8.1 GW to 4.9 GW.

## Boost the UK's economy with a growing green sector

Tidal stream could provide £1.4 bn benefit to the UK economy by 2030 whilst supporting 4000 jobs.

**WORTH UP TO £17 BN  
GROSS VALUE ADDED**

**SAVING £1 BN**



## Develop and build UK supply chains

Tidal stream projects are currently being delivered with over 80% UK supply chain spend.

Nova Innovation's O2 device was conceived in Orkney, designed in Orkney and Edinburgh, and built in Dundee. Steel from Motherwell, blades from the Solent, anchors from Anglesey and hydraulics from the Midlands.

Nova Innovation's Shetland Tidal Array saw 25% of construction spend go to local companies in Shetland, including steel, blades and vessels; and during operation, 50% of supply chain spend goes to local companies.

## TIDAL STREAM PROJECTS DELIVERED WITH OVER 80% UK SUPPLY CHAIN SPEND



## Level up the UK's coastal communities and beyond

LSE's Grantham Institute has found that investment in tidal stream energy leads to regionally balanced growth and supports the Government's levelling up agenda.

The Resolution Foundation argues that average returns on public investments in innovation in tidal stream energy is comparatively higher than investment in other renewable technologies.

50-60% of the economic benefit in terms of GVA and jobs is expected to be generated in coastal areas.

## Export technology and expertise around the world

There's over 100 GW of global potential with the UK strongly positioned to seize an export market forecast to be worth £76 bn by 2050.

Edinburgh based Nova Innovation is currently exporting turbines to Canada, Proteus Marine has exported to Japan, and they and other UK companies are exploring opportunities in France and Indonesia. More than 90% of the world's economy is now covered by net zero targets. The demand for a predictable renewable resource will continue to grow.





# The UK must act to ensure it maintains its leadership position.

Tidal stream turbines are currently generating electricity in Shetland, the Pentland Firth and Orkney.

Over 70 GWh of clean, predictable renewable electricity has been produced, equivalent to the annual consumption of 20,000 households.

## Industry is calling upon government to:

- **Set a 1 GW tidal stream target for 2035.**
- **Work with industry to deliver a tidal stream strategy**, following the successful model of offshore wind.
- **Commit to ongoing, persistent and predictable revenue support.**
- **Accelerate consenting and grid connection** to get technology in the water quicker.



The MEC is the voice of the UK's tidal stream energy and wave energy industries.

Established in 2018, the MEC's membership spans technology and project developers, associations, manufacturers, and small and medium sized enterprises working in the marine energy supply chain.

Our vision is for the marine energy sector to support a secure, cost-effective, and fair transition to net zero, enabling investment, supporting British innovation, and levelling up with employment opportunities across the UK.