Electricity: Wave & Tidal

This lever controls the sub-levers listed in the table, and ambition levels are for the end year shown on the right-hand side.

The Atlantic provides most of the wave power available to the UK. The power of Atlantic waves is approximately 40kW/m of exposed coastline. A variety of designs for generating electricity from waves have been developed.

Tidal energy generators convert energy from the tides into electricity. There are two types of tidal generator: tidal stream and tidal range.

Tidal stream systems use underwater turbines to convert the energy from the horizontal flow of tides produced by the constant ebb and flow. Currently there are only a few tidal stream demonstrators in the UK, such as the Meygen project to provide a multi-turbine array between Scotland's northernmost coast and the isle of Stroma, with a planned capacity of up to nearly 400 MW.

Tidal range generators use the potential energy resulting from the difference in height of low and high tides.

Level 1

Wave and tidal electricity capacity in the UK is negligible.

Level 2

Wave and tidal capacity increases to around 10 GW, capable of generating up to 30 TWh.

Level 3

Wave and tidal capacity increases to around 35 GW, capable of generating up to 80 TWh.

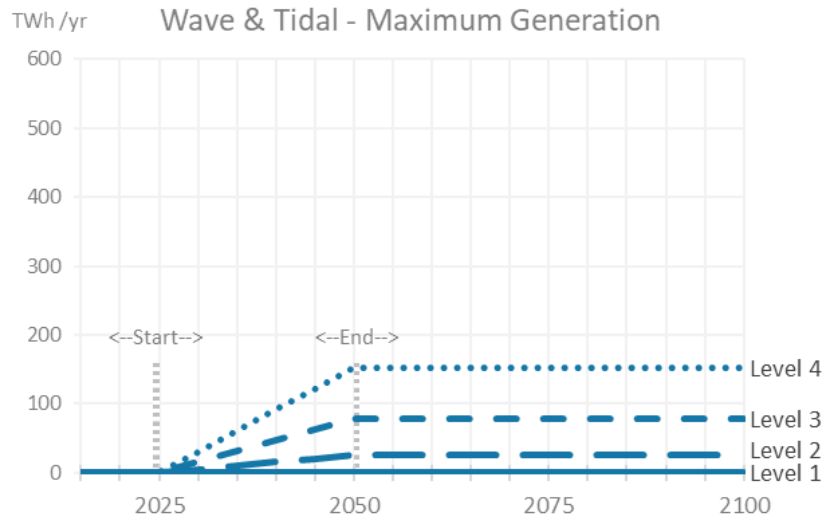
Level 4

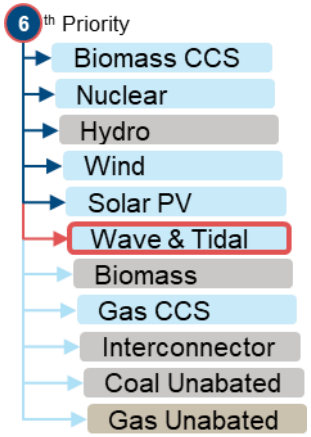
Wave capacity increases to 13 GW and tidal capacity increases to over 50 GW, which is considered the maximum technical limit by some experts, capable of generating up to 150 TWh.

Default Timing

Start year: 2025, End year: 2050

Sub-Lever	Units	2015	Level 1	Level 2	Level 3	Level 4
Tidal Stream Capacity	GW	0.0	0.0	8.0	16.0	22.0
Tidal Range Capacity	GW	0.0	0.0	0.0	15.0	33.0
Wave Capacity	GW	0.0	0.0	1.5	3.0	13.0





Lever Priority

Wave and tidal power is sixth in the priority order for generating electricity.

Where supply would otherwise exceed demand, measures lower in the priority order will be superseded by those above them.

Unabated gas will meet any shortfall in demand.