Ocean Energy

Stats & Trends 2023

April 2024

Ocean Energy Europe

Ocean Energy

Stats & Trends 2023

April 2024

Ocean Energy Europe

METHODOLOGY

The data of this report are based on information provided by ocean energy developers, publicly available specialist sources, third-party and national government websites. Deployment figures are extracted from the Ocean Energy Europe database. The methodology outlines the approach taken for key sections of the report and includes a definition of the parameters studied in the report.

DISCLAIMER

TEXT AND ANALYSIS: Valentin Dupont

EDITORS: Rémi Gruet and Victor Kempf

DESIGN: JQ&ROS Visual Communications (jqrosvisual.eu)

COVER PHOTO: Courtesy of Nova Innovation

Table of contents

Key findings

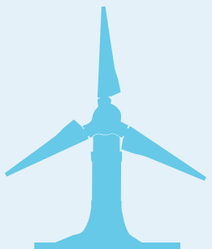
Europe
Industry moves up a gear

TIDAL STREAM
Getting pre-commercial farms ready

2023 INSTALLATIONS
+280kW
capacity added.
Capacity additions rise again.

CUMULATIVE INSTALLATIONS
30.5 MW
installed in Europe since 2010.
11.75 MW are currently in the water.

Tidal energy production reaches
93 GWh



WAVE ENERGY
Deployment levels bounce back

2023 INSTALLATIONS
+595 kW
capacity added.
Capacity additions above the last five-year average in Europe.

CUMULATIVE INSTALLATIONS
13.3 MW
installed in Europe since 2010.
1 MW is currently in the water.

Global total since 2010

	2023 INSTALLATIONS	CUMULATIVE INSTALLATIONS
TIDAL STREAM	375 kW capacity added.	41.4 MW
WAVE ENERGY	1,600 kW capacity added.	26.4 MW

Rest of World
Complementary funding and policies fueling competition from the US and China

TIDAL STREAM
US leads capacity addition outside Europe.

2023 INSTALLATIONS
95 kW
capacity added.

CUMULATIVE INSTALLATIONS
10.9 MW
installed since 2010.

WAVE ENERGY
China and **US** dominate deployments and reduce gap with Europe.

2023 INSTALLATIONS
1 MW
capacity added.

CUMULATIVE INSTALLATIONS
13.1 MW
installed since 2010.

Outlook Europe
137 MW of pipeline to kick-start industrialisation in 2024-2028

TIDAL STREAM
127 MW
underway thanks to revenue support.

WAVE ENERGY
10 MW
The opening of a new chapter with farm development.

Trends

PUBLIC SUPPORT
Earmarked funding boosts farms development

- UK government contracts 53 MW of capacity thanks to increased ringfenced budget for tidal stream.
- French government provides €65M and revenue support to the 17.5 MW Flowatt project.
- European grant support unlocks 1 new wave energy farm and 2 new tidal farms.
- US government increases annual budget for ocean energy for the third year in a row bringing it to $120M.
- China is progressing towards its goal to deploy a fleet of pilot farms thanks to a combination of subsidies and revenue support.

INDUSTRY
Increased market visibility stirred partnerships with major energy players.

PRIVATE INVESTMENT
Reported private investments up by 75%.

Statistics

EUROPE: Industry moves up a gear

The ocean energy sector has made great progress towards commercialisation in 2023. The UK and French governments have played pivotal roles, contracting a combined 70 MW of tidal stream capacity. This brings publicly supported tidal additions in the 5 next years to 127 MW. This significant leap forward is largely due to the introduction of long-awaited revenue support systems. Meanwhile, wave energy projects made significant strides with full-scale prototypes and have taken key steps toward the development of pilot and pre-commercial farms.

Public investment reached unprecedented heights, fuelling private investors' appetite, especially among industrials and major energy players. This is great progress, but clearer market visibility at national levels and continuous RD&I support under EU funding programmes will be instrumental for Europe to be the first continent to bring ocean energy to market.

TIDAL STREAM: Getting pre-commercial farms ready

Capacity additions on the rise again

Annual installations – 4 full-scale devices were deployed in Europe in 2023 representing 280 kW of new capacity. This is slightly lower than Europe's yearly average deployments in recent years, as developers are currently seeking finance for their upcoming pre-commercial farms.

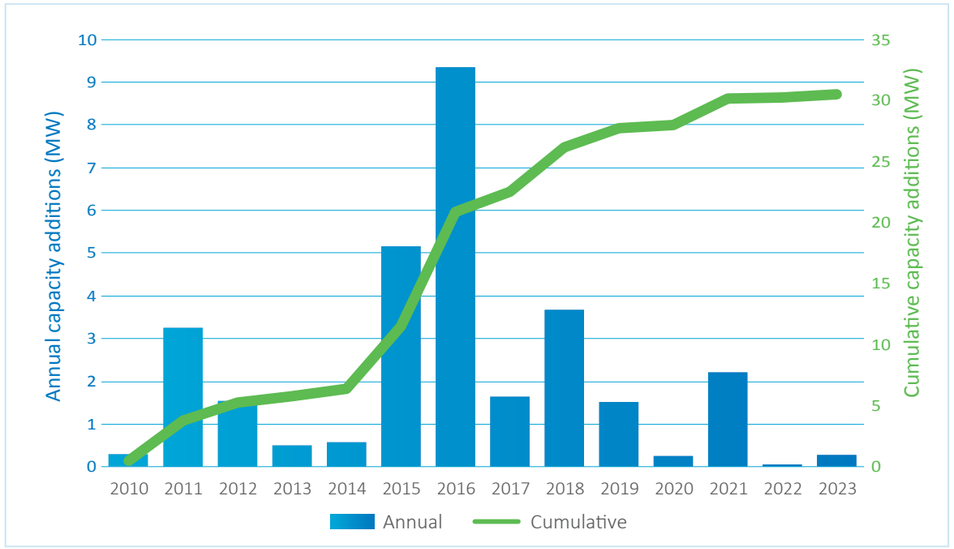


Figure 1: Annual and cumulative tidal stream capacity in Europe

Source: Ocean Energy Europe

Cumulative installations – 30.5 MW of tidal stream technology have been deployed in Europe since 2010. 11.75 MW are currently operating, and 18.75 MW have been decommissioned as projects have successfully completed their testing programmes. The next significant capacity additions are expected for 2026/2027 from pre-commercial farms.

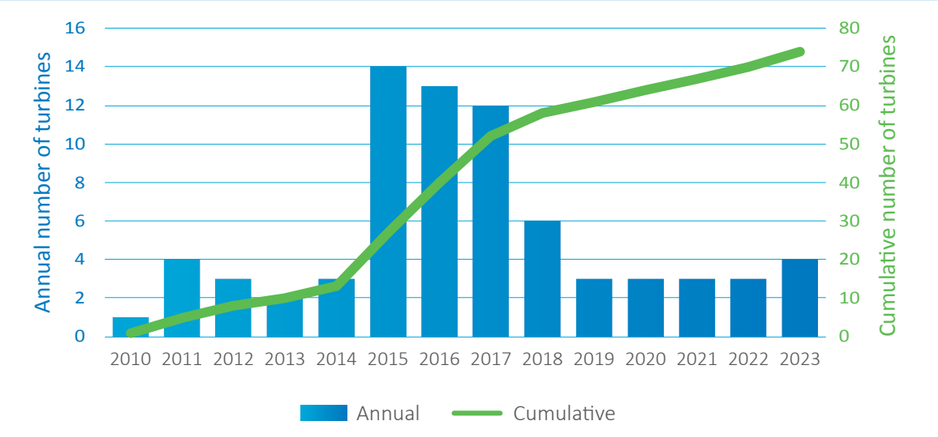


Figure 2: Annual and cumulative tidal turbine installations in Europe

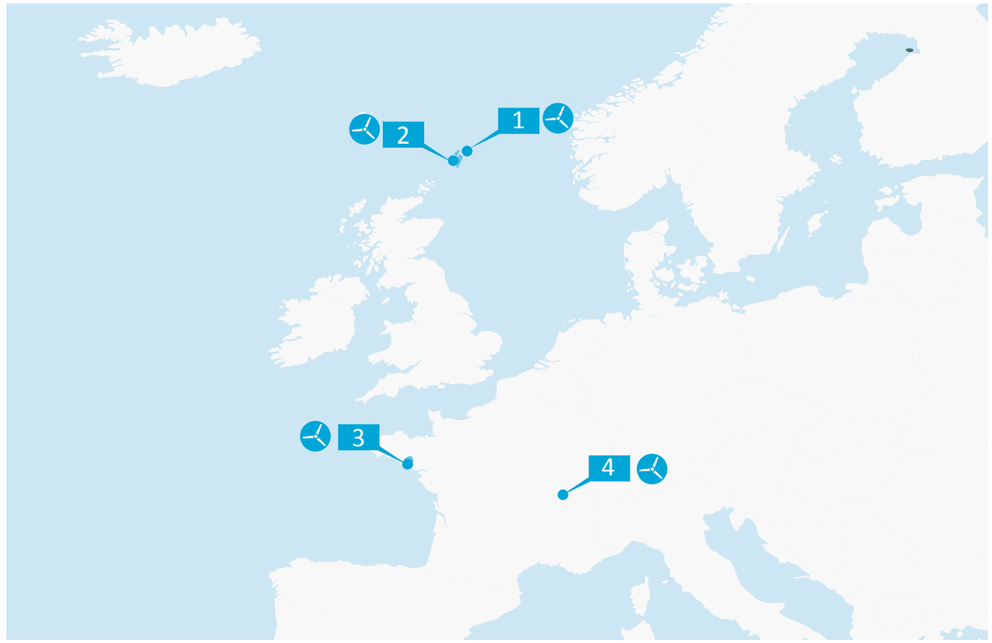
Source: Ocean Energy Europe

French and UK hubs leading the way

Building on their great resources and historical industrial knowledge, the UK and France solidified their position as market leaders for tidal stream technologies. Both governments have unlocked pre-commercial farms thanks to revenue support systems.

Scottish company Nova Innovation chose French waters to deploy its first tidal stream turbine outside of the UK, underlining the attractiveness of the country for project developers across Europe.

Photo: Nova Innovation



Country	Map ref.	Location	Device developer	Device name	Type	Capacity device (kW)	Number of turbines	Scale
UK	1	Scotland (Shetland)	Nova Innovation	Grace	Horizontal Axis	100	1	Full-scale
UK	2	Scotland (Shetland)	Nova Innovation	Hali Hope	Horizontal Axis	100	1	Full-scale
FRANCE	3	Etel Estuary	Nova Innovation	N/A	Horizontal Axis	50	1	Full-scale
FRANCE	4	Rhône river	EEL Energy	N/A	Undulating membrane	30	1	Full-scale

Figure 3: Tidal stream deployments in Europe in 2023

Source: Ocean Energy Europe

EUROPE
TIDAL STREAM

Tidal production increasing at steady pace

Cumulative electricity production from existing demonstration projects and pilot farms reached a total of 93 GWh in 2023. Despite maintenance rounds in the last few years, annual production is steadily increasing. This is clear evidence of the reliability of tidal stream installations over time, even at this early stage of technological development.

The European tidal stream sector exported 12.4 GWh in 2023 led by MeyGen, Nova Innovation's pilot farm, Orbital Marine Power's O2, Magallanes Renovables' ATIR, and Sabella's D10 turbine.

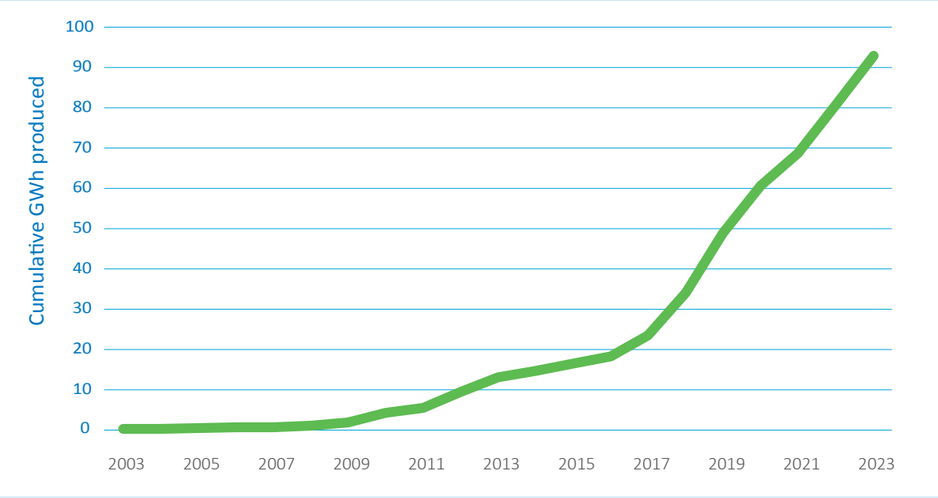


Figure 4: Cumulative power produced by tidal stream in Europe (GWh - Gigawatt hours)

Source: Ofgem Renewables, public releases from developers, information supplied to OEE by developers

Current deployments reflect low market visibility in recent years, but the future looks brighter

Fragmented public funding and lack of market visibility at national level in the past has meant that deployments have mainly been supported by EU funding. This significantly slowed down deployments, in spite of the technology being ready for further pilot farms, as clear pathways and long-term visibility are key for projects to make a business case.

However, this dynamic is changing as market visibility greatly improved in 2023. National revenue support systems in leading tidal markets along with new EU funding have sparked private investors' appetite and unlocked several pre-commercial tidal projects. We expect a large increase in capacity in the coming years, with more and bigger projects coming online across Europe.

WAVE ENERGY: Deployment levels bounce back

Capacity additions above last five-year average in Europe

Annual installations – 595 kW of wave energy capacity was deployed in Europe in 2023, up from 46 kW in 2022. Capacity additions are back to standard deployment levels, underscoring significant project achievements over the past year. This spells the end of Covid-19 impacts on production and installation, evidenced in 2022's historically low deployments.

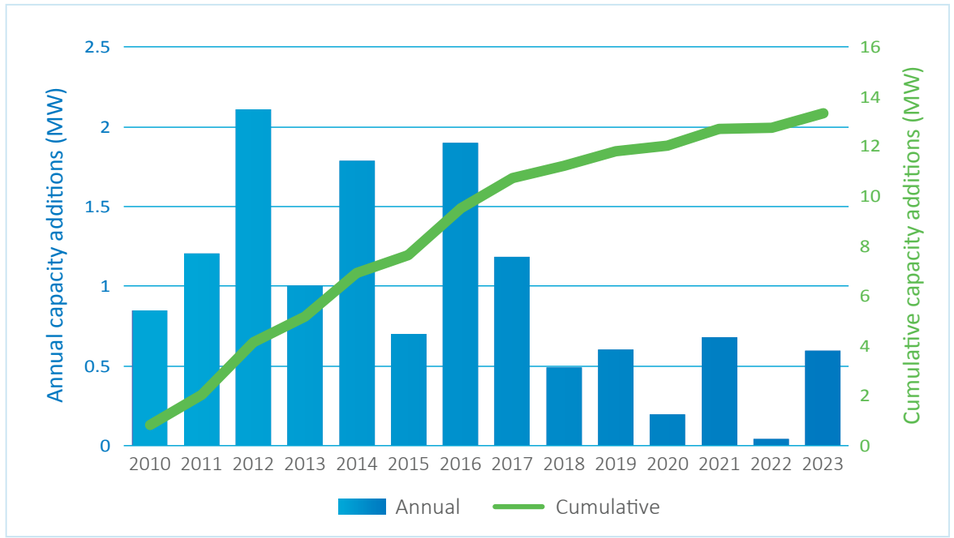


Figure 5: Annual and cumulative wave energy capacity in Europe

Source: Ocean Energy Europe

Cumulative installations – 13.3 MW of wave energy have been installed in Europe since 2010. 1 MW is currently in the water, and 12.3 MW have been decommissioned following the completion of testing and demonstration programmes. Continued EU investments in R&D over time enabled the deployment of several full-scale devices and led to considerable advancements in wave energy technological readiness.

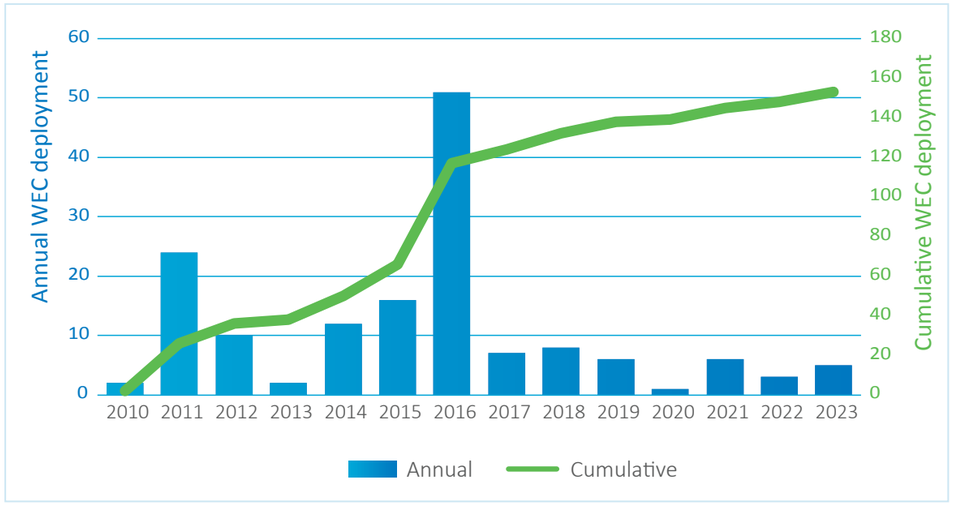


Figure 6: Annual and cumulative wave energy converter (WEC) deployments in Europe Source: Ocean Energy Europe

Southern Europe at the heart of new deployments

Southern Europe confirms its status as a hotspot for wave energy deployments with 4 installations in 2023. This is a consequence of both the excellent resource and the growing policy support, especially along the Atlantic coastline.

Installations span across 4 nations, demonstrating opportunities and technological progress across multiple markets. This trend is set to continue as several additional deployments are planned in the region over the next few years.

Photo: Eni

Country	Map ref.	Location	Device developer	Device name	Type	Capacity device (kW)	Number of turbines	Scale
PORTUGAL	**1**	Aguçadoura	CorPower Ocean	C4	Point absorber	300	1	Full-scale
ITALY	**2**	Mediteranean Sea	Eni	ISWEC	Oscillating WEC	260	1	Full-scale
SPAIN	**3**	Valencia	Rotary Wave	N/A	Point absorber	20	1	Full-scale
FRANCE	**4**	Nantes (SEM-REV)	GEPS Techno	Wavegem	Attenuator	10	1	Full-scale
MULTIPLE COUNTRIES	**5**	Multiple locations	GEPS Techno	WavePearl & WaveRuby	Attenuator	5	>5	Full-scale

Figure 7: European wave energy deployments in 2023 Source: Ocean Energy Europe

Wave installations paving the way for pilot and pre-commercial farms

Up until 2023 wave energy deployments focused on testing full-scale prototypes. Wave energy is now transitioning to the next stage in Europe, with the launch of the first calls for European wave pilot farms end 2023 and first-time support for two wave projects from the Innovation Fund. This new funding has enabled projects to garner increased political support and attract private investments.

The deployment of CorPower Ocean's C4 marks a significant milestone towards the HiWave-5 project, which could be the first wave energy pilot farm in the world. The Swedish developer aims to deploy three additional wave energy devices at the Aguaçadoura test site off the coast of Porto.

REST OF THE WORLD: Funding and policies fueling competition from the US and China

The US and China confirmed their position as Europe's main competitors in ocean energy. The US government has increased its yearly budget for ocean energy for the third year in a row, bringing the total funding over the last 5 years to $520M. Additionally, support is ramping up at US State level with California and Oregon endorsing dedicated laws to boost the development of ocean energy.

The Chinese government enshrined the "large-scale deployment of ocean energy" in its five-year plan and targeted the deployment of pilot farm fleets. Historically, Chinese targets for other renewable energies have always been overshot, making this pledge a serious threat. Europe needs to capitalise on its technological lead and realise its commercial ambitions if it is to resist upcoming competition from Chinese and US manufacturers.

TIDAL STREAM: Europe still in the lead, but US steps up installations

European technological leadership in tidal stream remains undisputed for now, with a cumulative capacity 3 times as high as all other countries combined - 30.5 MW vs 10.9 MW. Non-European capacity additions fell in 2023, after 5 years of increases, due to political uncertainties on the Canadian market, which was the most developed so far.

All 2023 tidal additions outside Europe took place in the US. This series of deployments underscores the growing market interest in ocean energy technologies across the Atlantic where enhanced market visibility and annual increases in grants create more business opportunities.

Photo: ORPC

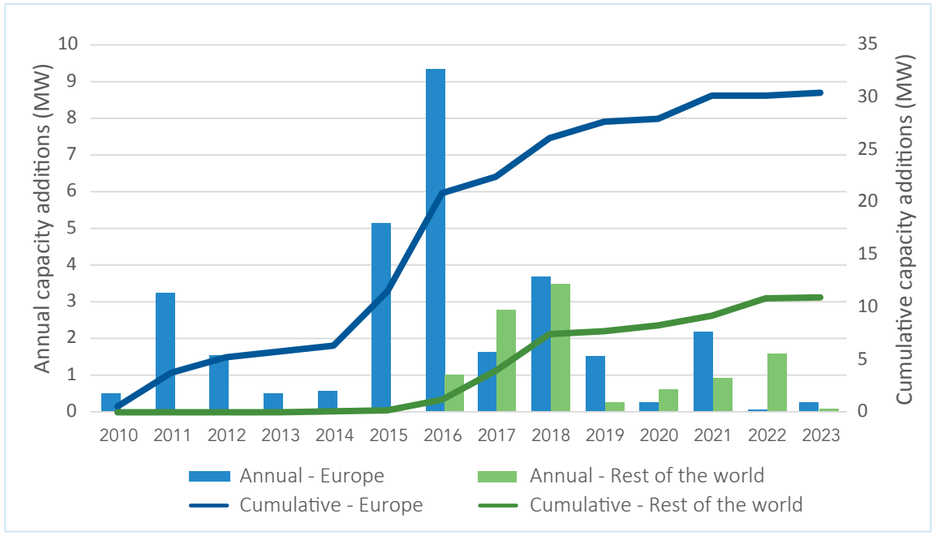


Figure 8: Installed global tidal stream energy capacity

Source: Ocean Energy Europe

Country	Location	Device Developer	Device name	Type	Capacity (kW)	Number of turbines	Scale
US	Alaska	ORPC	RivGen	Horizontal axis	40	2	Full-scale
US	Maine	ORPC	Modular RivGen	Horizontal axis	17.5	1	Full-scale
US	Maine	ORPC	Modular RivGen	Horizontal axis	17.5	1	Full-scale
US	Maine	ORPC	TidGen	Horizontal axis	20	1	Full-scale

Figure 9: Tidal stream installations beyond Europe in 2023

Source: Ocean Energy Europe

REST OF THE WORLD
TIDAL STREAM

WAVE ENERGY: US and China deploy the most and reduce gap with Europe

Europe and the rest of the world are neck and neck in terms of cumulative capacity additions - with 13.3 MW and 13.1 MW respectively. However, 2023 marks the highest volume of deployment outside Europe since 2019, with a total of 1 MW.

Growing policy support in the US and China is starting to bear fruit. Dedicated funding programmes to boost RD&I along with new testing infrastructures in both jurisdictions have fast-tracked technological progress and unlocked new deployments.

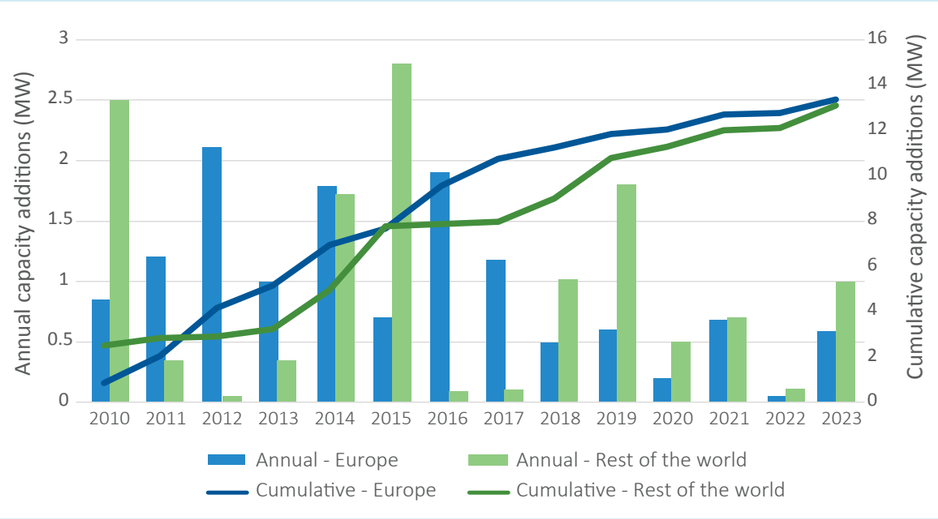


Figure 10: Installed global wave energy capacity

Source: Ocean Energy Europe

Country	Location	Device Developer	Device name	Type	Capacity (kW)	Number of devices	Scale
CHINA	Guangdong	GIEC, China Southern Power Grid	Nankun	Point absorber	1000	2	Full-scale
US	Maine	Oscilla Power	Triton	Point absorber	N/A	1	1:6
US	New Jersey	OPT	MOSWEC	Point absorber	N/A	1	Full-scale

Figure 11: Wave energy installations beyond Europe in 2023

Source: Ocean Energy Europe

Off-grid deployments offer alternative business models

Technologies targeting off-grid applications are well represented in the 2023 deployment cohort.

Energy giant Eni is developing its wave energy converter to decarbonise offshore oil and gas platforms. French company GEPS Techno is providing floating buoys to decarbonise all ranges of ocean data monitoring activities. Across the Atlantic, US company ORPC offers modular solutions to power isolated communities and reduce expensive diesel consumption.

The absence of clear market visibility for grid-connected projects, as well as the large ocean energy resource available around islands, drove the sector's interest in off-grid markets. Some of these applications/markets can provide an easier business case compared to main-grid applications. For example, offshore power is harder to come by and island networks are less well connected, making tidal and wave an interesting alternative to expensive diesel generation.

On top of unlocking new market opportunities, such alternative applications can be a stepping stone to utility-scale markets by providing a business case to develop full-scale technologies. However, industrialising wave and tidal will require main-grid opportunities to increase volumes, build supply chains, and ultimately lower costs.

Photo: GEPS Techno

OUTLOOK EUROPE: 137 MW pipeline to kick-start industrialisation in 2024-2028

The ocean energy sector is expected to make great steps toward industrialisation in the next five years. From of a larger project pipeline, 137 MW in total are publicly supported via EU programmes or national schemes, making them very attractive for private financiers.

Market visibility at national level will remain the main driver to accelerate deployments of wave and tidal technologies. With the right policy support, appetite from major industrial and energy investors should continue to grow.

The current revision of the EU National Energy & Climate Plans is an opportunity for the European Commission and Member States to give the right market signals to industrial players. Only then can the ocean energy targets enshrined in the EU Offshore Strategy be met.

TIDAL STREAM: At least 127 MW of pre-commercial farms underway thanks to revenue support

Tidal stream has passed the 100 MW mark of pre-commercial farms under development. This is a key milestone in the transition from pilot farm stage to commercialisation. Capacity additions in the next five years will remain focused on leading tidal markets with 9 tidal projects set to hit European waters in the UK and France.

94 MW will be added to the grid in Scotland and Wales thanks to the UK government's CfD AR4 and AR5, which provided the required long-term revenue certainty to unlock private investments. The French government's financial package, comprised of a grant and revenue support, will secure the coutry's first pre-commercial farm. The 17.5 MW FloWatt project slated to be deployed in Normandy will mark a turning point for the French tidal sector.

EU grant funding unlocked 14 MW of new tidal farms under the SEASTAR and EURO-TIDES projects. EU grant support will remain instrumental to drive forward competition via new deployments. Dedicated calls for pilot and pre-commercial farms must continue to secure new technology scale-ups.

The current pipeline is set to grow and could reach 700 MW by 2028 provided that current market mechanisms are maintained and that new announcements are translated into ambitious actions. The French President announced commercial tenders for tidal stream in the energy strategy which could reach 500 MW by 2028 — if industry demand is met.

WAVE ENERGY: Pilot and pre-commercial farms mark the start of a new era

The development of wave energy technology is accelerating rapidly. The next 5 years will see as much capacity added as the past 11 years. Furthermore, upcoming wave projects will be spread all across Europe, showcasing the versatility of the technology and its extensive market opportunities.

Several full-scale wave energy devices and at least two farms could hit the water by 2028. The most important capacity addition will come from the 5 MW Irish wave energy pre-commercial farm led by Simply Blue and state-owned utility ESB. CorPower's HiWave-5 project could bring online the world's first wave energy pilot farm in Portugal by 2025. Lastly, ongoing Horizon Europe calls are poised to unlock two additional wave pilot farms which will bring the number of farms under development to four.

As demonstrated with wind, solar, and more recently tidal, revenue support at national level will be instrumental to enable multi-MW pilot and pre-commercial farms. Continued grant support for full-scale prototypes from EU or national funding programmes remains essential for technological progress to continue.

OUTLOOK
EUROPE

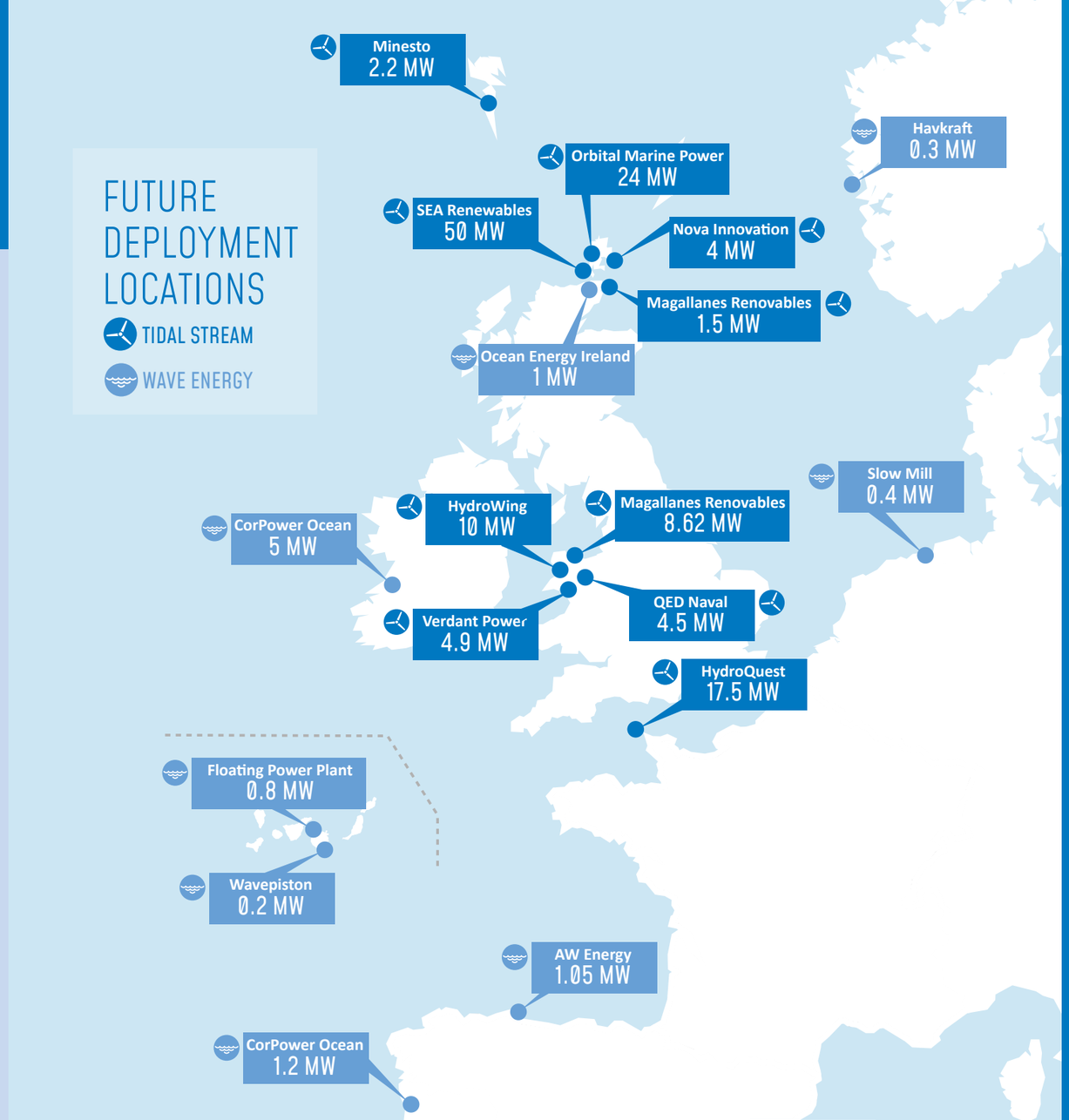


Figure 12: Wave and tidal stream projects that have received revenue support, assigned PPA, or EU/national funding for full-scale deployments in real sea conditions and pilot and pre-commercial farms.

Source: Ocean Energy Europe, UK & FR governments, Horizon Europe and Innovation Fund call results.

Trends

PUBLIC SUPPORT

EARMARKED FUNDING UNLOCKS WAVE OF PILOT AND PRE-COMMERCIAL PROJECTS

Public funding for ocean energy deployments reached the unprecedented level of **€195M** in Europe. While some of that funding will only be disbursed over the lifespan of the projects, this is a clear sign of the industry's scale-up to larger projects.

Deployment targets along with earmarked revenue support are the most powerful tools to accelerate industry scale-up. More than 70 MW of tidal stream capacity has been contracted by European governments in 2023 thanks to national revenue support schemes. In addition, the first wave energy farms have reached important financial and technological milestones.

NATIONAL LEVEL: REVENUE SUPPORT BOOSTS PRE-COMMERCIAL FARMS DEVELOPMENT

The UK government earmarked **£30M** annually for tidal stream — over 15 years — in its Contract for Difference's (CfD) Auction Round 5, after a £20M round in 2022. This enabled the government to add 53 MW across 11 projects in 2023, on top of the 40 MW already contracted.

The French government boosted tidal stream development by providing a financial package including at least **€65M** of funding along with a feed-in tariff for the 17.5 MW FloWatt project led by HydroQuest. A few months later, French President Emmanuel Macron announced commercial tenders for tidal stream as part of the revision of France's national energy strategy.

The Spanish 'RENMARINAS DEMOS' Program awarded **€240M** to the development of testing infrastructures and marine renewable technologies, including **€12.2M** to wave energy demonstration projects.

This is a considerable step forward, yet it is crucial to further extend policy and funding support to enable the industry's transition to larger pre-commercial projects. Only then can further cost reductions happen, which will in turn boost deployments and speed-up market uptake.

EUROPEAN LEVEL: GRANT SUPPORT REMAINS ESSENTIAL TO ENABLE NEW DEPLOYMENTS

Horizon Europe awarded **€40M** to the EURO-TIDES and SEASTAR projects to bring two new tidal farms in European waters.

The EU Innovation Fund granted **€65M** for the demonstration of two wave energy projects, SAOIRSE and SEAWORTHY, following the introduction of its new pilot projects window.

The EuropeWave programme supported by the Scottish and Basque governments, as well as the European Commission, granted **€13.4M** to three wave technology developers to enable them to design, build and ultimately test their device in real sea conditions by 2025.

These awards build trust in winning projects and companies, allowing them to attract considerable capital from private investors. Grant funding for pilot and pre-commercial farms remains the best way to make projects investible, lower financing costs and bridge the financing "valley of death" to commercialisation.

REST OF THE WORLD: US AND CHINA ARE KEEPING UP

This year, the US government provided a record **$120M** to the WATER POWER TECHNOLOGIES Office's (WPTO) Marine Energy Program to boost the development of ocean energy technologies — bringing US RD&I funding since 2019 to **$520M**. This is significantly more than Europe provided for its sector, across all programmes, and despite the strong support in 2023, and could soon see EU manufacturers facing US competitors.

China is progressing rapidly toward its goal of deploying a fleet of pilot farm projects supported by a combination of subsidies and revenue support. The LHD tidal project — a 1.7 MW turbine — is supported by a significant grant and a feed-in-tariff well above 300€/MWh. The Chinese Minister for Energy also hosted Commissioner Sinkevičius and his delegation last September for a Blue Economy Day focused on 3 key sectors: shipping, fisheries and… tidal energy.

INDUSTRY

MAJOR ENERGY PLAYERS ENTER THE FIELD

In 2023, increased market visibility and funding led to several new partnerships with major energy players. Power utilities and oil and gas companies showed great interest in the sector, as projects reached important development milestones.

UTILITIES PLUGGING INTO OCEAN ENERGY

State-owned Irish utility ESB and leading Irish renewable developer SIMPLY BLUE created a joint venture to deliver a 5 MW wave energy pre-commercial farm off the coast of Clare in Ireland.

ENGIE Research & Innovation's branch Laborelec joined ORBITAL MARINE POWER's EURO-TIDES tidal farm project.

French utility QAIR continues its collaboration with tidal developer HYDROQUEST to deliver the FloWatt project off the coast of Normandy.

Faroe Islands utility SEV extended its partnerships with Swedish tidal company MINESTO.

MOMENTUM FUELS OIL AND GAS PLAYERS PARTNERSHIPS

TOTAL ENERGIES joins CORPOWER OCEAN's Pilot Access program.

SHELL purchased two ORPC Modular devices for deployment at a Shell Facility on the Lower Mississippi River in 2024.

SHELL signed a partnership with WAVEPISTON to identify wave energy opportunities.

EQUINOR signed a partnership with HAVKRAFT to conduct a feasibility study to use wave energy for decarbonisation of offshore operations.

TOTAL ENERGIES joined the Renewables for Subsea Power Project led by Scottish companies MOCEAN ENERGY and VERLUME.

PRIVATE INVESTMENT

75% INCREASE IN 2023

Private investment also benefited from the increased public support and market visibility with a 75% jump in officially announced deals compared to 2022. This confirms again that funding and targets are the main drivers to crowd-in investments and accelerate the deployment of innovative technologies. It is important to note that this number merely accounts for public announcements, and does not represent the total flow of finance into ocean energy projects. The increase remains a clear trend showcasing strong interest in those technologies and companies.

MINESTO secured **€10.7M** through right issue of shares.

ONEKA TECHNOLOGIES secured **€8.7M** through an equity round of financing to support the development of its desalinisation solution.

MOCEAN ENERGY secured **€2.6M** in new equity to drive forward their Blue Star technology.

HAVKRAFT obtained **€1.3M** from a new capital raise campaign.

HYDROQUEST collected **€1.5M** via a crowdfunding campaign on Wiseed.

WAVEPISTON secured **€1.4M** from crowdfunding and private investors.

Photo: Mocean Blue X

NEWS

Project spotlight

HYDROQUEST

French government's financial support enables world's largest tidal farm

Photo: HydroQuest

In July 2023, the French Minister for the Energy Transition announced €65M of funding along with dedicated revenue support to deliver the FloWatt project led by technology developer HydroQuest, utility Qair, and shipyard company Construction Mécaniques de Normandie.

Due to start operating in 2026, France's first pre-commercial tidal farm will be composed of seven 2.5 MW turbines which will meet the electricity needs of 20,000 people for 20 years.

CORPOWER OCEAN

Paving the way for the world's first wave energy farms

Photo: CorPower Ocean

The successful deployment of CorPower Ocean's C4 is a significant milestone towards the completion of the HiWave-5 project. It aims to deploy a pilot array of 4 wave energy converters off the coast of Aguçadoura in Portugal.

Data and lessons learned will also help to progress CorPower's Saoirse wave energy pre-commercial farm in Ireland. Led by Simply Blue and the Irish State utility ESB, Saoirse will bring 5 MW through 14 WECs off the coast of Clare.

Project spotlight

FLOATING POWER PLANT

SEAWORTHY project awarded Innovation Fund support

Photo: Floating Power Plant

Danish company Floating Power Plant received Innovation Fund support to develop an integrated wave and wind platform including a cutting-edge electrolyser with hydrogen storage.

This will provide baseload power at any given time and optimise investment through shared infrastructure for the three technologies in a single unit.

MINESTO

Gaining ground in the Faroe Islands

Photo: Minesto

Swedish company Minesto successfully completed the installation of the offshore infrastructure of the Dragon 12 kite set to be deployed in Vestmanna in the Faroe Islands.

After the successful connection of the export cable onto the foundation, the site is now ready for power production.

ORBITAL MARINE POWER

EURO-TIDES unlocks a 9.6 MW tidal farm

Orbital has been awarded Horizon Europe support from the European Commission to deliver a new tidal stream farm in European waters.

The 9.6 MW project will enable Orbital to start producing units in series and optimise long-term operation and maintenance programmes.

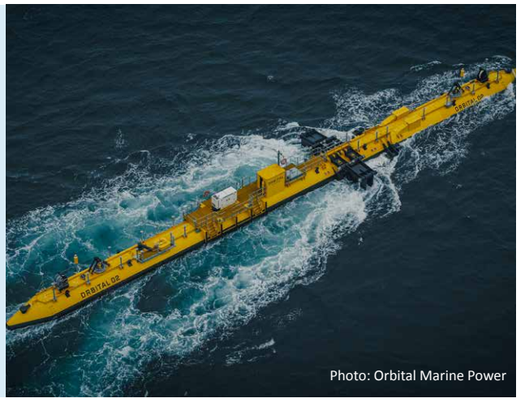


Photo: Orbital Marine Power

NOVA INNOVATION

The SEASTAR project will bring 16 new turbines to Orkney

Scottish company Nova Innovation has been granted EU Horizon Europe funding to deploy a 4 MW tidal stream farm at the EMEC test centre located in Scotland.

Building on the achievements of its existing array operating in the Shetlands since 2016, the future 16 turbine farm will kick-start series production and continue to drive down costs.

Photo: Nova Innovation

2023 A year in ocean energy

JANUARY

- **Evolve** Study results show that ocean energy's power profile can save hundreds of millions of euros per year in grid management and dispatch costs
- **Minesto** and Faroese utility **SEV** expand their collaboration agreement to new operations in Vestmannasund and the planned tidal array in Hestfjord

FEBRUARY

- **SEA Renewables'** MeyGen tidal farm hit the 50 GWh electricity production milestone with an average availability of 95% since 2018

MARCH

- French regions, industry players, and test sites create the national OPEN-C Foundation to facilitate the testing of marine renewables technologies
- **Orbital Marine Power** secures an Option Agreement from Crown Estate Scotland for a 30 MW tidal project in Westray Firth

APRIL

- Chinese **LHD Demonstration Project** located in Zhejiang Province exceeds 5 years of continuous operation

MAY

- US DOE opens $45M funding call to advance tidal energy

JUNE

- **Wavepiston,** along with Danish universities, secures €2M from the Energy Technology Development and Demonstration Program (EUDP) to optimise the cost and weight of its wave energy converter
- The Canadian Minister of Fisheries and Oceans announces the launch of a tidal energy task force to explore bottlenecks and opportunities associated with the deployment of tidal energy projects in the Bay of Fundy

JULY

- The EU Innovation Fund awards support to two ocean energy projects for the first time following the opening of the new pilot projects window
- French government boosts support for tidal stream with a €65M grant and a feed-in-tariff for the FloWatt project led by **HydroQuest**

AUGUST

- Wave energy developers **CETO Wave Energy Ireland, IDOM Consulting,** and **Mocean Energy** reach phase 3 of the EuropeWave innovative procurement programme, enabling them to test their prototype in real sea conditions by 2025

SEPTEMBER

- **CorPower Ocean's** 300 kW wave energy converter starts exporting power to the grid following deployment at the Aguçadoura site
- The UK government contracts 53 MW of additional capacity across 11 tidal stream projects as part of the 5th auction round of its CfD scheme

OCTOBER

- State-owned Irish utility **ESB** partners up with **Simply Blue** to develop the world's largest wave energy power plant off the coast of Clare in Ireland
- California governor signs a bill to boost the development of ocean energy
- **NEMMO project** delivers 4 novel-design brand-new blades with lighter and more durable composite for floating turbines enabling increased power extraction
- **Orbital Marine Power** secures support from Horizon Europe to bring a 9.6 MW tidal array into the water as part of **EURO-TIDES**

NOVEMBER

- The administrative strike price for tidal stream increases by 29% in the UK CfD auction round 6 to factor in high inflation impacts on costs
- **Minesto** completes the final system integration and commissioning for the deployment of its 1.2 MW Dragon 12 at Vestmanna site
- French President Emmanuel Macron announces commercial tenders for tidal stream as part of the French energy strategy update (PPE)

DECEMBER

- **Nova Innovation** is granted Horizon Europe support to install 16 new turbines in Orkney
- **Floating Power Plant** formalises a €26M grant agreement with the Commission for its SEAWORTHY project in the Canaries integrating wave, floating wind and hydrogen production

Want to go into more detail?

Did you know that Ocean Energy Europe members can request information from our ‘Kit-in-the-Water’ database about projects deployed around the world?

Contact us now to find out more about this and the many other benefits of OEE membership!

Yamila Conill
Membership, Marketing & Sales Manager
y.conill@oceanenergy.eu
+32 2 400 1040

About Ocean Energy Europe

Ocean Energy Europe (OEE) is the voice of the ocean energy industry.

Over 120 organisations, including Europe's leading utilities, industrialists and research institutes, trust OEE to represent the interests of the sector, making it the largest network of ocean energy professionals in the world.

Working in close relationship with its members, OEE possesses the data, knowledge and legitimacy to deliver strategic analyses of the sector's development and needs.

www.oceanenergy.eu

Ocean Energy Europe´s Lead Partners

Rue d´Arlon 63 | 1040 Brussels | +32(0)2 400 1040 | info@oceanenergy.eu