ORBITAL

MARINE POWER

Who Are Orbital Marine

ORBITAL MARINE POWER

European Marine Energy Centre

Headquarters: Kirkwall, Orkney

Edinburgh office

Privately held Scottish company with 33 employees who have accumulated over 100 engineering years focused on optimising the world's most advanced tidal turbine technology.

ORBITAL MARINE POWER

Company founded: 2002

Scotrenewables® Tidal Power Ltd

World's first grid connected floating tidal turbine (250kW): 2011

World's most powerful tidal turbine, SR2000, starts operation: 2016

SR2000 exports more power (3GWh+) in 12 months than entire wave & tidal sector in Scotland over previous 12 years.

Company rebrands, 2018

Company raises UK's largest ever crowdfunding bond - £7m in 10 weeks.

Company starts build of first 2MW O2. 2019

What does Orbital Marine want to achieve.

ORBITAL
MARINE POWER

Unlock clean, predictable power for millions of people, homes and businesses around the world through the commercialisation of our proprietary technology and engineering know-how.

Breakthrough Industry Project: SR2000

ORBITAL MARINE POWER

- ✓ **World's most powerful operating tidal turbine – 2MW.**
- ✓ **2 x 1MW nacelles with 16m rotor diameters.**
- ✓ **Stall regulated control.**
- ✓ **500T turbine mass.**

Interreg North-West Europe FORESEA

Construction Philosophy

ORBITAL
MARINE POWER

Manufacturing process analogous to ship building.

No dependency on high cost specialist construction vessels.

Simplified, standard offshore operations involving moorings and cable installation.

Interreg
North-West Europe
FORESEA
European Regional Development Fund

Performance

ORBITAL
MARINE POWER

- ✓ 2.2MW peak output.
- ✓ Provided 7%+ of entire Orkney electricity demand over 1 week of continuous generation.
- ✓ Predictable source of generation.
- ✓ 450+ days on moorings and grid connection.
- ✓ Weathered 6m+ storm waves.
- ✓ Maintained generation in 3m+ waves.
- ✓ 6,000hrs generation per nacelle.
- ✓ 3.2GWh+
- ✓ 30+ interventions – no lost time incidents, no expensive vessels.
- ✓ <45mins quickest time to repair.
- ✓ TRL 6

Interreg
North-West Europe
FORESEA

FORESEA support experiences

ORBITAL
MARINE POWER

- Procurement Rules and timescales
- Eligible Costs
- Application Preparation
- Speak to preferred test centre

Interreg
North-West Europe
FORESEA

Orbital O2: Most Advanced Tidal Turbine in the World

ORBITAL MARINE POWER

2.5MW of power at rotor shaft.

20m rotor diameter / 628m²

74m main hull structure.

Pitch controlled rotors.

Forward and aft catenary mooring.

Interreg North-West Europe OceanDEMO

EUROPEAN UNION

European Regional Development Fund

O2 in Build

ORBITAL
MARINE POWER

Item	Element	SME	Country
1	Nacelles and Pitching Hubs	No	Germany / Sweden / Italy / France / Czech Republic
2	Superstructure	Yes	UK
3	Blades	Yes	UK
4	Skids/ Outfitting	Yes	Internal
5	Variable Speed Drives	No	Finland
6	Anchor Baskets	Yes	UK / Germany
7	Hull (mooring) connectors	Yes	UK
8	Electrical Connector	No	Italy
9	Transport	TBC	UK
10	Vessel support	Yes	UK

Interreg
EUROPEAN UNION
North-West Europe
OceanDEMO
European Regional Development Fund

O2 in Build

ORBITAL
MARINE POWER

O2 in Build

ORBITAL
MARINE POWER

O2 in Build

ORBITAL
MARINE POWER

O2 in build

ORBITAL
MARINE POWER

O2 in Build

ORBITAL
MARINE POWER

SKF®

The Orbital Team

ORBITAL
MARINE POWER

ORBITAL

MARINE POWER

FOLLOW OUR STORY @