Corporate Background

✓ 17 years focused on engineering and testing the world’s most advanced floating tidal technology.

✓ 100 years+ accumulated engineering and operational experience.
✓ 30 staff covering technical, commercial and administration.
✓ Targeted patents granted and filed on key controlling IP.

✓ £50+ million funding secured to date.

Company incorporated: 2002

First major investment: 2006

World’s first grid connected floating tidal turbine: 2011

Awarded flagship Horizon 2020 funding: 2015


SR2000 – 3GWh. Equity investment. Rebranding: 2018

Grid connected test facility: European Marine Energy Centre

Company Headquarters: Kirkwall, Orkney

Edinburgh office

✓ 17 years focused on engineering and testing the world’s most advanced floating tidal technology.
Breakthrough Industry Project: SR1-2000

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

Manufacturing process analogous to ship building.
No dependency on high cost specialist construction vessels.
Simplified, standard offshore operations involving moorings and cable installation.
Increased yield by positioning rotors in fastest flowing regions near the surface.
Maximise generator uptime by enabling fast response maintenance interventions.

Minimise cost of repairs and service vessels via turbine design and marine operations.
Dynamic Performance

Ultimate mooring loads driven by controllable thrust generation (i.e. highly survivable in storm conditions).

Loading variation due to surface waves manageable for generation across wide range of conditions.
✓ 2.2MW peak output.
✓ Best single tide = 6.3MWh.
✓ 21.7MWh+ in 24hrs generation = 45% capacity factor.
✓ 130MWh in 7 days of continuous generation = 39% capacity factor.
✓ Provided 7%+ of entire Orkney electricity demand over 1 week of continuous generation.
✓ Predictable source of generation.
✓ 450+ days on moorings.
✓ 6,000hrs generation per nacelle.
✓ 3.2GWh+
Orbital O2: Optimised Low Cost Solution

Legs hinged axially to present nacelles and pitch hubs to surface for servicing at the same time as improving structural load-paths.

360° blade pitching allows for simplified forward and aft mooring arrangement and improved yield.

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No. 691916.
Orbital O2: Investors

Orbital Marine Power (Orkney)

- Number of investors
  - 2,278
  - 1,435

- Total Investment
  - £7,000,000
  - £3,835,505

- Average Investment
  - £3,062
  - £2,673

- Investment by week
  - £75K
  - £60K

- Investment by day
  - £30K
  - £20K

Where has the investment come from?

Who is investing?

- First time investors: 352
  - £3.87K
- Repeat investors: 1,981
  - £2.83K
Orbital O2: in build

Location: Orkney Islands.
Contractor: European Marine Energy Centre.
Activity: Operation of installation site.

Location: Kirkwall, Orkney.
Contractor: Orbital Marine Power.
Activity: Electrical systems assembly.

Location: Coupar, Fife.
Contractor: Gray Fabrication.
Activity: Heavy steel fabrication.

Location: Motherwell.
Contractor: Liberty Steel Dalzell.
Activity: Main plate steel supplier.

Location: Llangefni, North Wales.
Contractor: Faun Trackway.
Activity: Anchor manufacturer.

Location: Gosport, Southampton.
Contractor: AC Marine Composites.
Activity: Heavy steel fabrication.

Location: Island of Eday.
Contractor: Orbital Marine Power.
Activity: Onshore grid connections.

Location: Fall of Warness.
Contractor: Leask Marine.
Activity: Mooring and cable installation.

Location: Dundee.
Contractor: TEXO Group.
Activity: Main turbine manufacture.

Location: Edinburgh.
Contractor: Orbital Marine Power.
Activity: Engineering & project management.

Location: Scunthorpe.
Contractor: Bonds Heavy Castings.
Activity: Load bearing heavy castings.

Location: Sheffield.
Contractor: Shepcote Engineering.
Activity: Hydraulic cylinder supply.
Orbital O2: in build
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Orbital O2: in build
Orbital O2: in build
✓ LCOE includes developer margin.

✓ High level modelling agrees with ORE Catapult report findings of <£100/MWh within 1 GW of capacity.

✓ Detailed and focussed engineering review underway with Black and Veatch.

✓ Early indications from Black and Veatch indicate much more aggressive cost reduction is possible (red dashed line).

✓ More detailed modelling suggests that in certain resource conditions the Orbital O2 could achieve returns at a tariff of <£80/MWh within 200 MW of capacity.
Cost reduction pathway to under £100/MWh

- Cost reduction trajectory moves rapidly towards cost parity with other renewable generation sources.
- Capital grants can lower and flatten the left hand side of the cost reduction bars.
- 1GW build out that lands the Orbital Marine Power technology at < £100 / MWh.
- The industry partners that deliver the initial projects will be best placed to capture long term benefits from rapidly expanding global markets.
✓ Opportunity to create separate scalable Manufacturing Business Units.

✓ Blade manufacture, pitch, naselle and skid assemblies identified as high GVA opportunities for future export markets.

✓ Ability to license technology with expansion to servicing and supplying global market.

✓ Follow on O&M service contracts.

BILL OF MATERIALS BREAKDOWN BY MAJOR WORK PACKAGE

- Blades, 5%
- Pitch and naselle, 25%
- Moorings, 17%
- Logistics commissioning and ops, 6%
- Electrical drives, transformers, onboard aux sys, 15%
- Fabrication and assembly, 32%

Orkney Project

- Scottish Content: 39%
- RoW: 61%

- Scottish Content: 57%
- RoW: 43%

Orkney Project

- UK content: 39%
- RoW: 61%
O2: Supply Chain Scenarios

**EARLY COMMERCIAL MARKET**
- 30 turbines
- £250m capital spend
- 25% margin

First 60 MW build out

**MATURE COMMERCIAL MARKET**
- 500 turbines
- £2.5bn capital spend
- 15% margin

**Construction / project cost build out**

- Cumulative revenue and profit margin (£M)
- Installed Capacity (MW)

**Phased Project Build Out to 60 MW**

- Cumulative Project spend
- Cumulative profit margin
- Cumulative capacity
O2 – Scottish and UK domestic projects

- Opportunity to create separate scalable Manufacturing Business Units.
- Blade manufacture, pitch, nacelle and skid assemblies identified as high GVA opportunities for future export markets.
- Ability to license technology with expansion to servicing and supplying global market.
- Follow on O&M service contracts – revenue of between £150k - £200k per MW in early

- This only captures direct benefit, there will be indirect GVA benefits created in the proximity of areas of economic activity.
- Capital spend only
- Enduring employment and value creation through the ongoing provision of O&M services
Mature (10GW) export market

Scottish content

30% share of supply = £450m per annum

£550m per annum global export opportunity including 10% share of O&M

This is 90% of Scottish salmon export value and is before accounting for license fees for international manufacturing

O2 – Scottish export projects

30% of capital spend

Early International Export

Mature (10GW) export market

<table>
<thead>
<tr>
<th>Turbines</th>
<th>Scottish export (£M)</th>
</tr>
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<tbody>
<tr>
<td>30</td>
<td>201.7</td>
</tr>
<tr>
<td>250</td>
<td>454.9</td>
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