

TECHNOLOGY BRIEF

bioSTREAM™

The bioSTREAM™ is a renewable energy technology designed to convert tidal and marine current energy into useful electricity. The power conversion process and associated device motions are modelled on biological species, such as shark and tuna, that use Thunniform-mode swimming propulsion. By mimicking these creatures, the bioSTREAM™ benefits from 3.8 Billion years of evolutionary hydrodynamic optimisation. The inherited biological traits result in a cost-effective and reliable renewable energy system.



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Advantages

Cost Effective

- > few moving parts, low maintenance, modular
- > autonomous, unmanned, low insurance and OH&S costs
- > simple two-part installation requires no special equipment or vessels

Environmentally Benign

- > zero visual impact
- > small footprint and minimal seabed disturbance
- > slow 'natural' movements, silent operation, and no harm to sea life
- > no significant modification to natural currents, salinity or turbidity
- > no dispersal of any pollutants or foreign substances into the environment

High Performance

- > continuously self-orienting to align with flow direction
- > large swept area to maximise power capture (up to 2MW per unit)
- > hydrodynamically optimised
- > inherently efficient as proven by nature
- > streamlined to survive in all conditions, including hurricanes



Features

- > hydrodynamically optimised biomimetic fin
- > processor-controlled fin-pitch actuator (internal)
- > light-weight biomimetic construction
- > O-DRIVE™ generator module (removable)
- > bioBASE™ mooring system