

## Hydro-generation

Hydrogeneration or regeneration is the ability to convert a small part of your boat's momentum into electricity as it sails. Simply put, you lower a propeller into the water which rotates in the flow of water under the hull and spins a small alternator to generate power. You can have a dedicated fixed pod attached to the hull, or use your main prop by inserting an electric motor into the drivetrain, but most common is a lifting device that is transom mounted. Output tops out at around 600W, but the technology is robust and well proven on some of the most arduous races in the world. Most of us won't manage the double-digit boat speeds seen in the Vendée Globe, but cruising boats can still generate 80-120W at 5 knots, depending on the size of propeller they use. Drag is marginal, typically well under 0.25 knots.

### Watt&Sea Cruiser

The most visible of the various brands, thanks to its sponsorship of some high-profile French racers, Watt & Sea comes in either a 300W or a 600W cruising variant. Choose a dedicated pod version for permanent mounting on the hull, or a transom bracket with a variable length leg. The leg with the propeller on it swings up or down into the water as you pull on one of two ropes. A regulator controller allows two separate battery banks to be charged at 12V or 24V using multi-stage



ABOVE (L-R)  
The Watt & Sea  
and Sail-Gen  
hydrogenerators

BELOW  
The Swi-Tec  
hydrogenerator

charging. Three different propeller sizes are available – the smallest 200mm favouring fast boats, and the largest 280mm suited to slower cruising boats.

- £3,504.10 (300W) or £5,010.41 (600W)
- [wattandsea.com](http://wattandsea.com)

### Swi-Tec

Rated at 600W, this Italian-made product has a propeller whose blades can be manually re-pitched to suit your boat speed: either 6 knots, 10 knots or 12 knots. The idea is that the power output is always at its best that way, and Swi-Tec claims the unit can generate 110W at 5 knots. The system includes a 1kW regulator which can accept up to 400W of solar



input. When the batteries reach a preset voltage, the regulator puts the system into freewheel mode. The pod is transom-mounted and raised on a 4:1 purchase line, so the unit can be deployed and recovered at speed.

- €3,411.39 (c£3,070)
- [swi-tec.com](http://swi-tec.com)

### Sail-Gen

Generating some 80W at 5 knots, or around 350W at 8 knots, the Sail Gen looks a little different to the two options above. It is a rigid welded aluminium frame that houses an impeller on a carbon-fibre driveshaft, while the alternator is housed out of the water where the unit attaches to the transom. A 'dive plane' controls the impeller's depth in the water and adjusts for sea state. It is larger and heavier than the competition, but there are two different propeller sizes available for fast or slow boats. Intriguingly, a third variant is also available – the Duogen (from £3,313.12), which can serve as both a hydrogenerator or as a wind turbine.

- £2,464.69
- [eclectic-energy.co.uk](http://eclectic-energy.co.uk)

## BEST OF THE REST

### Windvane steering

Many systems out there that reduce draw on the battery, but there are a number of UK manufacturers:

Hydrovane – [hydrovane.com](http://hydrovane.com)  
Hebridean – [windvaneselfsteering.co.uk](http://windvaneselfsteering.co.uk)  
Seafeather – [sea-feather.co.uk](http://sea-feather.co.uk)  
Neptune – [windvane.co.uk](http://windvane.co.uk)

### Bilgeaway

An in line filter you can fit to your bilge pump that captures toxic waste before it hits the waer: [bilgeaway.co.uk](http://bilgeaway.co.uk)

### Marlow BlueOcean ropes

Range of performance ropes made of recycled PET bottles. [marlowropes.com](http://marlowropes.com)

### ONESails FORTE 4T

Continuous yarn technology means these sails can be recycled in your household rubbish [onesails.com/uk](http://onesails.com/uk)

### Synthetic teak decking

One to weigh up: made of virgin PVC, but fully recyclable. [flexiteek.co.uk](http://flexiteek.co.uk),

### Bilge sock

Absorbs hydrocarbons in bilge water so you can pump out with equanimity [asap-supplies.com](http://asap-supplies.com)

### Ecoworks cleaners

Green cleaning from the heads to teak decking [ecoworksmarine.com](http://ecoworksmarine.com)

### Marine 16 cleaning product

Biodegradable bilge cleaner digests oil [Marine16.co.uk](http://Marine16.co.uk)

