

Categorie Premio

Accessibilità

Sostenibilità

Qualità della vita

Product name

Solarsail

Company name

Solar Sailor Holdings Ltd

Designer

Dr Robert Dane

Sphere of activity

Marine Technology and Innovation

Certifications

Solar Sailor Holdings is an Australian Registered Company.
Solarsails passed classification by NSW Waterways Maritime and approved in principle for larger vessels by international surveyors.

Italian dealer

Nil

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Product and innovations description

The Solarsail is a pivotally mounted wing, capable of rotation on two axes and able to act as a sail and a solar collector. It is a hydraulically operated and computer-controlled structure. The Solarsail can be rotated to maximise exposure of the attached PV cells to the sun, increasing harvest of sunlight by 40% above that of fixed PV cells. The Solarsail is designed to capture both direct and indirect sunlight and also to act as a sail – remarkably simple, yet a highly effective, innovation. The solarsail can also take advantage of the feedback between true and relative wind to give increased sailing speed ie motor sailing.

Solarsail technology is patented and unique to solarsailor vessels. The patent claim is broad and covers the concept on any vehicle using a wing with solar collectors pivotally mounted that may be moved to gain optimum incident energy from solar radiation and/or from the wind.

Technology / Operations

Solarsails have a range of applications

- for small unmanned vessels currently under design contract in USA
- luxury cruise vessels
- tanker ships
- ferries

Materials

Steel joint, aluminium frame, carbon fibre/fibreglass skin, hydraulic drives and computer control.

Dimensions

On the Sydney ferry solarsails are 4m x 2m, on vessels under contract they are bigger ie 15m x 6m. For tanker ships they can be up to 40m long.

Benefits to the environment

Renewable energy for shipping means: less fuel, less carbon dioxide and greenhouse gas emissions, less toxic gas emissions, less particulates, less noise and zero emissions at the wharf. Solarsail technology is a new way to move on the water, perhaps the greatest revolution in boats since the advent of steam. This technology provides the planet with the greenest shipping for blue highways.

Benefits to the human being

A 2007 study by American Chemical Society reported shipping-related emissions are responsible for approximately 60,000 cardiopulmonary and lung cancer deaths annually, with most deaths occurring near coastlines in Europe, East Asia, and South Asia. Under current regulation and with the expected growth in shipping activity, this is estimated that annual mortalities could increase by 40% by 2012. Solarsails and HMP provide the solution.

More products with important innovation in accessibility and sustainability

We have developed in conjunction with solarsails - Hybrid Marine Power (HMP) systems like that used in hybrid cars. We use lead acid batteries as the weight is not such a penalty and can be used as ballast. 97% of the batteries can be recycled - better for the environment. Solar Sailor's HMP is unique and developed over 7 years. Solar Sailor also has 5 research and development projects underway continually refining and patenting new aspects of HMP and Solarsail Technology.