

VOLTA

Electric-powered
High Speed Ferries




AUSTAL

Beyond electric

A sustainable maritime transport solution for everyone.

Forward thinking urban communities throughout the world are looking for mass transport solutions that are both economically and environmentally sustainable, for everyone.

Today's ferry services need to be faster, quieter, more efficient, while being less expensive to operate and better for the environment.

Austal has developed the VOLTA series of electric-powered high-speed ferries to spark a change in thinking, challenge convention and exceed the expectations of communities, operators and passengers alike.

Austal's VOLTA series is a complete, customisable electric-powered transport *solution* that has been designed from the hull up to offer a smarter, affordable alternative for ferry operators.

Ultimately comprising multiple vessel designs, Austal's VOLTA series combines state-of-the-art electric drive and lithium ion battery technology with lightweight, low-resistance, optimised hull forms to produce high-speed ferries like no other.

On-shore, Austal's VOLTA series are kept running at peak efficiency by the latest in charging infrastructure and in-service support.

Pursuing the ultimate in form and function, Austal's VOLTA series offers a true sustainable solution for everyone.

- » **Our planet** – Zero emissions*, reduced noise and low wave wash.
- » **Our community** – Cleaner, more reliable, safer and quieter.
- » **Your company** – Reduced energy consumption, maintenance costs and total cost of ownership.

*subject to source of energy

Powered by innovation



For more than three decades, Austal has been at the forefront of high-speed craft (HSC) design, technology, construction and sustainment – delivering 340 ships to 121 operators in 59 countries.

As the world's largest aluminium shipbuilder, Austal has earned a reputation built on innovative hull design, 'smart' maritime technology, modular manufacturing techniques and value-adding in-service support.

From safe, modern and efficient shipyards located in Australia, USA, The Philippines and Vietnam, Austal offers a growing portfolio of proven monohull, catamaran and trimaran vessel designs - ideal for commercial passenger and vehicle-passenger ferry services - with specifications optimised to match your vessel's operating profile and environment.

Austal has also developed value adding technologies such as **MARINELINK** and **MOTION CONTROL** that have transformed commercial ferry operations and helped set industry benchmarks for vessel and systems performance management, seakeeping and on board experience for both passengers and crew.

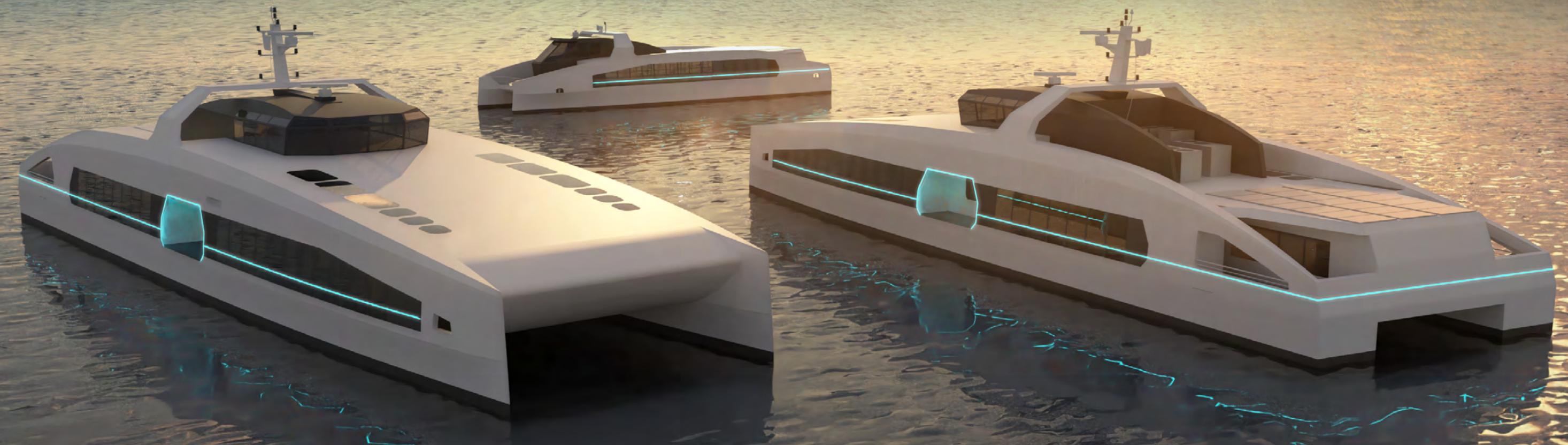
Not just a ship designer and builder, Austal is a true partner in your commercial maritime operations, with the capability to also provide ongoing service and support, wherever your fleet is in operation.



MARINELINK

The Volta Series

Customisable electric solutions
to suit any operation



Austral has initially developed three high speed ferry designs in the VOLTA series – the Passenger Express 46V, 43V and 32V – with the objective of meeting demands for electric powered vessels with greater passenger capacity, higher speed and environmental suitability.

- » The **Passenger Express 46V** offers a larger passenger cabin, with seating for up to 450 people.
- » The **Passenger Express 43V** is fast, capable of achieving speeds of over 30 knots.
- » The **Passenger Express 32V** is a smaller but equally capable high speed ferry, ideal for shorter routes and estuarine waterways.

Each of these zero-emission vessels, and any customised solution developed for your operation, can be delivered with a complete turn-key package of shore-based infrastructure and in service support.

With advanced modelling tools, Austral can develop a new electric-powered solution based on any of these designs, or a bespoke design unique to your requirements, that will optimise your ferry operations – in any environment. We provide options from fully electric to hybrid (electric/diesel/alternative fuels) and can offer range extensions.

Passenger Express 46V

Electrification meets exhilaration

The **Passenger Express 46V** is an IACS-approved, electric passenger ferry, ideal for any inland waterway service operating within a high population, urban environment.

Featuring a striking design with capacity for between 400 and 450 passengers, the catamaran boasts a natural, light filled interior enabled by large, panoramic side windows and generous

skylights located along the entire length of the vessel.

Distinctive, double automatic sliding doors provide direct access to the passenger deck for quick loading and unloading of passengers; ensuring turnaround times 'alongside' never exceed your fast battery charging requirements.



The Passenger Express 46V is an environmentally friendly, zero emission electric high-speed ferry that delivers a superior passenger experience, greater efficiency and lower operating costs.*

**subject to source of energy*

Principal Dimensions

- » Length overall (LOA) **45.6m**
- » Beam **12.3m**
- » Draft **< 2m**

Propulsion

- » Full electric 2 x permanent magnet motors
- » Propellers 2 x FPP, or CPP, waterjet or Azimuth
- » Batteries Full redundancy with 2 Lithium battery banks (one in each hull)

Payload and Capacities

- » Passenger capacity **400 to 450**
- » Bicycle capacity **10**
- » Crew capacity **3**

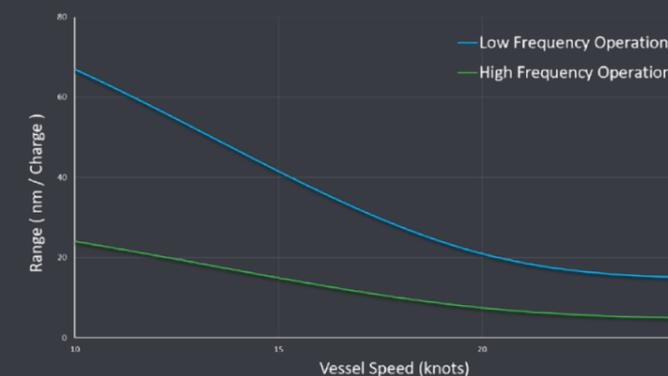
Performance

- » Maximum speed **25+ knots**
- » Maximum range per day **>175 nm with 20% reserve**
- » Minimum guaranteed battery life **7 years**
- » Travel time between charges at 20 knots **1 hour**
- » Travel time between charges at 15 knots **2 hours**

Plan view of main deck



Range per Charge
(Influence of Speed and Schedule on Range)



For increased frequency of operations the range per charge reduces for equal battery capacity and life

Passenger *Express* 43V

Fast and fabulous

Like the Passenger Express 46V, the new ferry has an exciting exterior with an optimised hull design that looks fast even when it is alongside. This lighter ship is matched with the same power plant as her larger sister, meaning the Passenger Express 43V can achieve more on express routes where frequency is key.

Ideal for inland waterways with major urban centres, including harbours, ports and rivers, the Passenger Express 43V is the VOLTA model for high speed transportation.

The **Passenger Express 43V** is the fast variant of the VOLTA series that can achieve speeds in excess of 30 knots while still comfortably accommodating up to 350 passengers.

Principal Dimensions

- » Length overall (LOA) **43.2m**
- » Beam **11.2m**
- » Draft **2m**

Propulsion

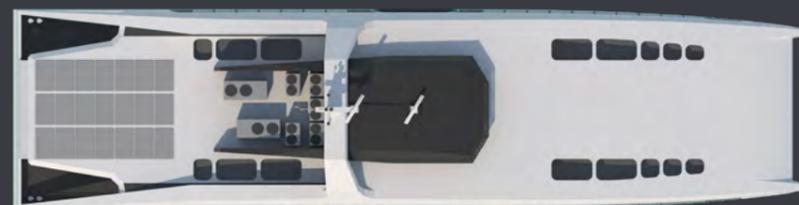
- » Full electric 2 x permanent magnet motors
- » Propellers 2 x FPP, or CPP, waterjet or Azimuth
- » Batteries Full redundancy with 2 Lithium battery banks (one in each hull)

Payload and Capacities

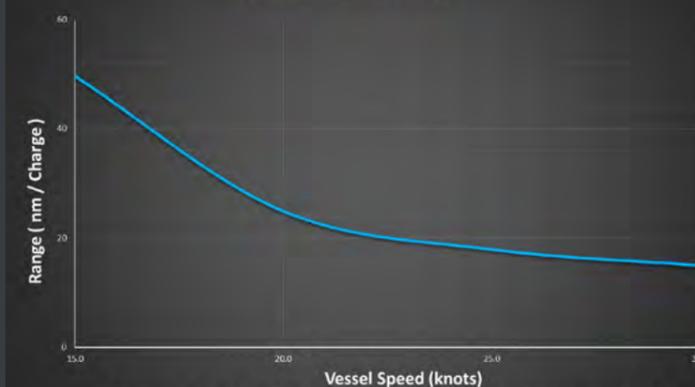
- » Passenger capacity **up to 350**
- » Bicycle capacity **10**
- » Crew capacity **3**

Performance

- » Maximum speed **30+ knots**
- » Service Speed **25 knots**
- » Range **18nm @ 25 knots with 20% reserve**
- » Battery life **Up to 10 years**



Volta 43m - Range per Charge
(Influence of Speed on Range)



Passenger *Express* 32V

The smart *Commuter*



With a speed similar to the Passenger Express 46V, the **Passenger Express 32V** is the flexible design alternative for high frequency, shorter ferry journeys in estuarine or major river port environments – where space may be at a premium.

Featuring a stylish variation on the distinctive VOLTA series architecture, the Passenger Express 32V is ideal for cross river and intra-city commuter services on major inland waterways where reliability and economy are priorities - servicing lower passenger volumes on a regular schedule.

With a spacious, easy flowing passenger deck accommodating up to 200 people and both side and aft access for quick and easy turnarounds, the Passenger Express 32V is the cost effective, electric powered alternative to traditional river ferries.



A complete Turnkey Solution

Custom designed packages to enhance your ferry operations



Austal provides you with a complete solution for your operational needs, with consideration given to the combined capital and operating expenditure of assets and infrastructure.

We offer an in-house optimisation tool developed in conjunction with leading suppliers to provide the most cost effective turnkey solution.

The VOLTA Turnkey Package options include:

- » Optimised Fleet / Vessel Design
- » Shore Side Charging Equipment
- » In Service Support
- » Finance Package

The efficiencies gained from an all-electric solution will minimise your total cost of ownership over the life of the vessel.

Future-ready *Fast Ferries*

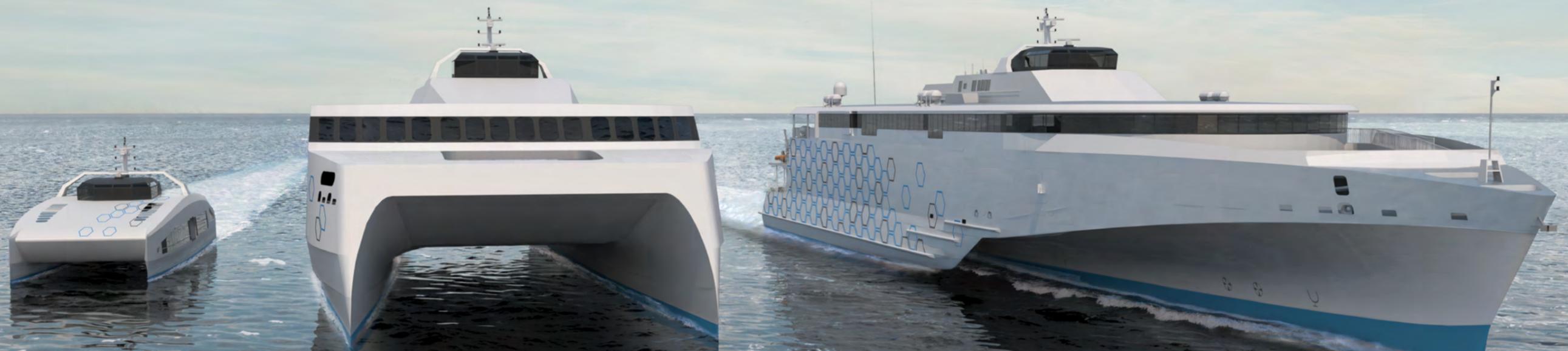
Proven platforms with pathways to **Zero Emissions**

Austral's VOLTA range of smaller vessels takes advantage of rapidly improving battery technology to provide operators with a zero emission solution today.

For operators of larger vessels on longer routes there are several pathways to a low carbon future that Austral is ready to help you navigate with its highly efficient, proven platforms.

Choose from an electric drive train, future ready for conversion to hydrogen fuel cell power or a mechanical drive train, future ready for alternative fuel blends.

Learn more at austal.com/future-ready





VOLTA

Further Information:

Please visit volta.austal.com
Contact your local Austal Sales Representative
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