



VEEM ANNOUNCES THE ACCEPTANCE OF SHARROW PROPELLER PERFORMANCE RESULTS FOR INBOARD VESSEL APPLICATIONS

Highlights:

- Through the testing of a range of Sharrow-designed inboard propellers on VEEM's 64' Viking test vessel, Sharrow was able to demonstrate evidence of the key benefits already seen on Sharrow outboard propellers – dramatic reduction of noise and vibration, better fuel efficiency, improved handling, and excellent reverse thrust.
- Following comprehensive testing, VEEM has formally accepted the test results of the Sharrow designs which progresses the SHARROW by VEEM relationship to the next phase of development and rollout.
- The rollout of the SHARROW by VEEM range of propellers will commence immediately with the initial focus being on the customers that have pre-ordered online, with designs optimized and tested for each vessel.
- The progression of the contract also enables expanded defence opportunities in Australia and the US, particularly in relation to the noise and vibration benefits.

VEEM Limited (ASX: VEE) ('VEEM' or 'the Company'), a designer and manufacturer of disruptive, high-technology marine propulsion and stabilization systems for the global luxury motor yacht, fast ferry, commercial workboat and defence industries, is pleased to advise that after extensive testing, the contractual criteria for advancing to the next phase of the Technology Collaboration Agreement with Sharrow Engineering, LLC ("Sharrow"), has been met.

On 2 October 2023, VEEM announced it had signed an agreement with Sharrow, a leading manufacturer of revolutionary propellers for boats and ships, to partner in designing a new innovative range of propellers, the SHARROW by VEEM, where VEEM would exclusively manufacture and sell Sharrow-designed propellers worldwide for inboard-powered vessels. Under the Agreement, progressing with the project was subject to a testing phase with contractual criteria for the performance of the Sharrow design on the VEEM test vessel.

After months of collaborative design work and testing of SHARROW by VEEM prototype designs on VEEM's Viking test vessel, VEEM has formally advised Sharrow that the performance of the SHARROW by VEEM propellers has met the criteria of the contract.

This significant milestone means that both parties are now committed to, and working toward, the manufacture and sale of the SHARROW by VEEM range of propellers for inboard vessels.

Testing Details

The testing involved many designs for various speeds and hulls compared against standard propeller equivalents. Through these different tests, VEEM and Sharrow were able to confirm that the key benefits of the Sharrow propeller over conventional propellers can be replicated for inboard vessel applications. The key benefits being:

1. Improved fuel efficiency;
2. Significant reduction in vibration and noise;
3. Improved handling; and
4. Excellent reverse thrust.



This testing demonstrated sufficient evidence of the key benefits above, to lead the Board of VEEM to agree that moving to the next phase of the Technology Collaboration Agreement with Sharrow will be of significant strategic benefit to VEEM going forward.

The testing conducted by VEEM was witnessed by Lloyds, a globally recognised independent marine classification body.

Testing of the SHARROW by VEEM test propellers showed greater gains in efficiency than the Neptunus vessel test* in the U.S., albeit over a narrower operational range. This gives VEEM and Sharrow great confidence at this early stage of development, that the SHARROW by VEEM range of inboard propellers will be able to match the broader efficiency gains of the outboard range of Sharrow propellers. As with development of the Sharrow outboard range it will take time to extract the full performance of Sharrow by VEEM for inboard applications.

Further Development

Sharrow's development of its outboard range clearly shows significant improvements achieved over time in all four key benefits which have been validated by third parties. This was achieved by the continuous learnings from early installations being fed back into their design process.

This same process is being adopted with the SHARROW by VEEM designs for inboard vessels. Initially, Sharrow and VEEM will work with the pre-order customers to ensure the designs are optimised for the vessel and then test the propellers upon installation to validate the comparative results. This data will be fed back into the Sharrow design system so the SHARROW by VEEM design library expands to the wide range of applications for inboard vessels globally.

This early part of the rollout will provide revenue to VEEM as well as important data for the future development of the entire SHARROW by VEEM range of propeller designs. While the first sale may occur in FY24, we expect to see volumes and sales increase through FY25. Pricing is expected to be considerably higher than standard propellers and will be another aspect of the product that is developed during the rollout.

Capacity and Expansion

Currently VEEM has the capacity to produce the early pre-order SHARROW by VEEM propellers without disrupting existing sales requirements. If the early rollout goes as planned and adoption rates are positive, then VEEM expects to start substituting some VEEM production for SHARROW by VEEM production later in FY25.

Any plans to expand capacity will depend on the results of the initial rollout. VEEM has developed an expansion plan for at least 50% additional propeller capacity within its existing facilities in Western Australia which would mainly involve the purchase of new machining centres and could be achieved within 12 months.

Potential further expansion, through facilities in the US or Europe, will be contemplated when early results support such an expansion. There are also additional considerations such as defence contracting, particularly in the US (see below), and Sharrow's facilities and headquarters in Detroit, Michigan, which lend weight to a future facility in the US.

*Prior to VEEM's involvement, Sharrow and Boattest.com conducted a test of an inboard Sharrow versus a VEEM prop on a 64' Neptunus motor yacht in the US which produced outstanding results and has been published online. The test was not witnessed by an independent classification body (such as Lloyds for the VEEM testing). As part of its testing process, VEEM reviewed all the data from the Neptunus test and found nothing to suggest that the results as presented by boattest.com are not an accurate reflection of the difference between the two propellers.



Defence

VEEM and Sharrow are contractors to defence in Australia and the U.S. respectively. The noise benefits of the Sharrow designs are of particular interest to both navies and VEEM expects to work closely with Sharrow on the casting and manufacturing of Sharrow designs for defence applications.

Under the Agreement with Sharrow, VEEM has the rights to sell and manufacture for the Australian government, Type 26 frigate designs globally and AUKUS applications.

Sustainability

Both Sharrow and VEEM recognise the opportunities for this new design to contribute to the global push for improved sustainability. The marine industry has a number of initiatives and targets for which the Sharrow design is applicable including:

- A. For emissions reduction such as the International Maritime Organisation's (IMO's) 2023 IMO Strategy on Reduction of GHG Emissions from Ships ([link](#)).
- B. For noise reduction targets aimed at marine wildlife preservation such as the United Nations' Goal 14: Conserve and sustainably use the oceans, seas and marine resources which includes a commitment to reduce ocean noise pollution ([link](#)). VEEM and Sharrow also plan to run noise testing comparisons on larger inboard vessels.

The Sharrow Propeller was recently named "Clean Technology Transportation Solution of the Year," by CleanTech Breakthrough, and Greg Sharrow was recently named a Notable Leader in Sustainability" by the publication Crain's Detroit.

Next Steps

1. Rollout of the SHARROW by VEEM range of propellers will commence immediately with the initial focus being on the customers that have pre-ordered online. This will provide revenue, important design data and general market feedback.
2. Continued development of the SHARROW by VEEM range through further design and manufacturing work as well as the feedback of customer data.
3. Work with defence organisations and industry in both the US and Australia to optimise the Sharrow benefits for naval applications, with particular interest in the significant noise reduction benefits to enable a competitive military advantage.
4. Dependent on early results from customers and further testing, introduce the SHARROW by VEEM range to existing customers leading to substituting sales of VEEM propellers with SHARROW by VEEM.
5. Capacity expansion when supported by sales and adoption rates.
6. Potentially work with Sharrow on other initiatives.

VEEM has expensed \$1.1 million on the Sharrow opportunity up to 17 April 2023 (all FY24). Sharrow has agreed to contribute a portion of the amount spent on manufacturing prototypes through a credit against future licence fees.



Investor Webinar

Shareholders are invited to attend a webinar later today regarding this announcement. Details are as follows:

Presenting: Mark Mioceвич, Managing Director and Greg Sharrow, Sharrow Engineering Founder and CEO.

Time: 12.00pm AEST/10.00am AWST on Monday, 29 April 2024.

Register for the investor webinar via the link below:

https://us02web.zoom.us/webinar/register/WN_4g36X0vISlqsH3yUzcDRmA

After registering, you will receive a confirmation email containing information about joining the webinar.

VEEM Managing Director Mark Mioceвич said: "We are very pleased to have been able to sign off on the testing phase and now be moving forward with manufacturing and selling the new SHARROW by VEEM range of propellers. The rollout of these will initially be carefully managed to ensure we are getting all aspects of the design and manufacturing right which will ensure the ongoing optimisation of the design database.

"We expect the design process to continue to evolve, continually generating better propellers in shorter time frames which will lead to increased revenue and margins as the product is rolled out."

Sharrow Engineering Founder and CEO, Greg Sharrow said: "Reaching this milestone with VEEM marks a pivotal moment in our partnership and underscores the effectiveness of Sharrow's revolutionary propeller designs. Our collaboration over the last six months has demonstrated the adaptability of our technology and its potential to redefine standards in this new market sector.

"We're thrilled to embark on this next phase of the rollout of the SHARROW by VEEM range, starting with our pre-order customers. Together, we're leveraging our collective expertise to deliver unparalleled performance and efficiency to customers worldwide.

"The testing period provided valuable insights and data, giving us even greater confidence in the product's future and strengthening the relationship between our two companies. We have the utmost confidence in VEEM's capabilities to cast and manufacture such a complex product efficiently, and believe this marks the beginning of a very expansive relationship."

This ASX announcement was authorised for release by the Board of VEEM Limited.

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ABOUT VEEM LIMITED (ASX: VEE)

VEEM is a designer and manufacturer of disruptive, high-technology marine propulsion and stabilization systems for the global luxury motor yacht, fast ferry, commercial workboat and defence industries. VEEM's market leading Gyrostabilizers significantly reduce the rolling motion of vessels in waves, increasing on-sea time and improving personnel safety and efficiency in a wide range of ocean conditions.

VEEM is also a successful producer of high-performance propellers, fin systems and specialised components delivering consistent profits, cash flow and dividends while also reinvesting in research and development for new products and processes.

Proudly headquartered in Perth, Western Australia, VEEM operates from a 14,700 sqm purpose-built fabrication and manufacturing facility, including Australia's largest non-ferrous foundry. VEEM employs approximately 200 staff in Australia, including graduates and apprentices, and maintains a highly skilled research and development team in-house. Celebrating its 50th anniversary in business in 2018, VEEM listed on the Australian Securities Exchange in 2016. www.veem.com.au

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ABOUT SHARROW ENGINEERING AND SHARROW MARINE

Sharrow Engineering, a Detroit-based advanced engineering and design firm, revolutionized propeller technology with the Sharrow™ Propeller, the first major advancement in propeller technology since the 1830s. Invented by Greg Sharrow, the Sharrow Propeller has solved the most basic problem of rotary propulsion, eliminating tip cavitation and vortices, and offering significant performance gains over traditional propellers. Sharrow Engineering holds over 150 patents worldwide and is the parent company of Sharrow Marine, which produces and sells the award-winning propeller for the maritime industry. Recognized as a TIME Best Invention of 2023 and by Fast Company's 2023 Innovation by Design Awards, the Sharrow Propeller also won the 2024 Clean Technology Transportation Solution of the Year by CleanTech Breakthrough, the 2022 Boating Marine Power Innovation Award from Boating Magazine and the 2020 Miami International Boat Show Innovation Award. For more information, visit www.sharrowmarine.com.