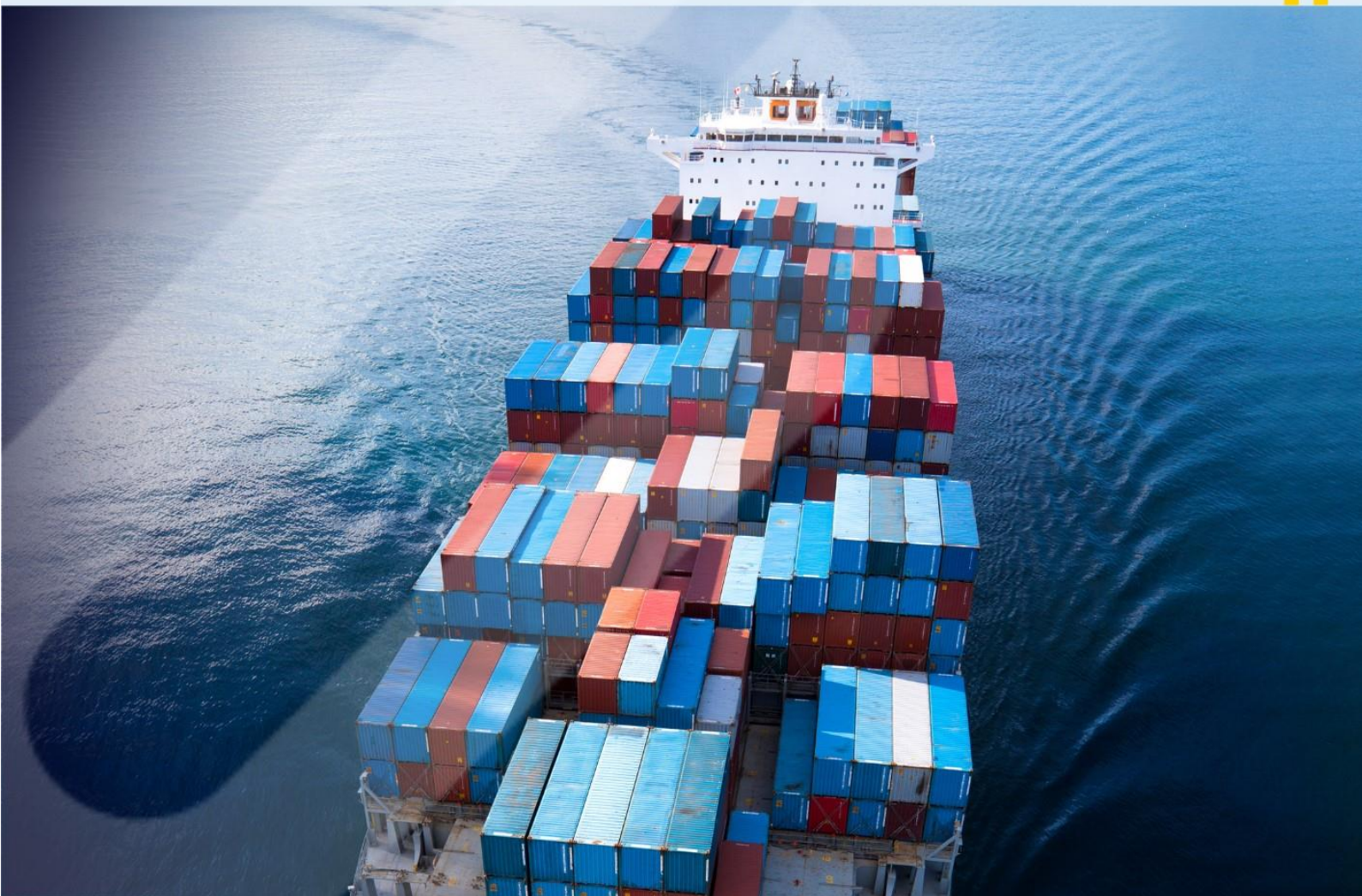




Industry Skills
Australia

MARITIME INDUSTRY

INDUSTRY SKILLS PRIORITIES PAPER - 2023





About Industry Skills Australia

Industry Skills Australia (ISA) has been appointed by Government as the Jobs and Skills Council (JSC) for the Transport and Logistics industry sectors, which includes Aviation, Maritime, Rail, Transport and Logistics, and the emerging sectors of Omnichannel Logistics and Distribution; and Air and Space Transport and Logistics.

Owned and led by industry, our JSC is committed to building a world-class supply chain workforce to increase productivity, create better jobs and build opportunities for individuals.

We will do this by leveraging our more than 20-year history with the transport and logistics industry, undertaking research and data analysis to inform workforce planning, advocating for a workforce development approach in tackling industry skills issues, and developing priority training products.

Purpose of the Industry Skills Priorities Paper

The purpose of this paper is to seek feedback from industry stakeholders on a summary of the key industry and skills-related trends that have been identified for the Maritime Industry. The main themes in this paper are drawn from desktop research, and targeted industry consultation since ISA commenced operations, and by drawing on our deep industry engagement over previous years. This information, along with feedback from stakeholders will be used by ISA in the development of the 2023 Maritime Industry Initial Workforce Plan and to prioritise work on the Maritime Training Products.

In the 2023 Initial Workforce Plans, JSCs are required to include a scan of each industry sector to identify key workforce challenges, identify existing workforce strategies/ measures, and outline planned industry engagement that will inform a more comprehensive 2024 Workforce Plan, including a schedule of proposed initiatives in response to identified workforce challenges.

Consultation questions

1. Are the identified issues/priorities correct?
2. Is there any additional information/context related to the identified issues that needs to be included in the Workforce Plan?
3. Are there any other key issues (existing or emerging) affecting skills and workforce development in the sector? What is driving these issues?
4. Are there any existing initiatives responding to workforce challenges that are achieving good results and could be used in other settings?

How to provide feedback

Stakeholders are invited to submit their comments on the key themes and issues outlined in this paper by close of business on **Friday 28 July 2023**.

It is acknowledged that the information provided about industry skills priorities in this paper is deliberately brief. The purpose of this paper is to validate and confirm consultation and research findings to date.

Responses and requests for further information should be emailed to:

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About the Maritime Industry

The Maritime industry comprises the operation, co-ordination and maintenance of vessels for the transportation of passengers or freight by water.

The activities of the industry can be categorised into five (5) occupational areas:

- **Navigation** - commanding and navigating vessels.
- **Engineering** - maintaining marine systems, equipment, operation and maintenance of machinery and ships engines.
- **Deck Operations** - performing duties and functions on a vessel and/or assisting with deck or engine work.
- **Support Operations** - performing duties and functions to support vessel operations.
- **Autonomous Operations** - working or supervising Autonomous Maritime Systems operations in Near Coastal waters.

The industry includes both commercial seafarers and personnel that are required to be certified by the Australian Maritime Safety Authority (AMSA), and uncertified crew, personnel and volunteers that are not required to be certified by AMSA.

The industry is an intrinsic part of the Australian economy, employing over 26,000¹ people across the major subsectors: passenger and freight transport, tourism and support services². The industry has an estimated annual revenue of \$7 billion in 2022-23, adding \$2.6 billion to the Australian economy³. The average age of workers in the maritime industry is 44.8 years⁴, with women making up 27.7% of the workforce⁵.

Notes

- i. Significantly expanded statistical data will be provided in the 2023 Initial Workforce Plan
- ii. The Transport and Logistics Jobs and Skills Council does not cover marine shipbuilding, fishing operations, port and marine construction, seafood and aquaculture, and defence. These areas fall under the coverage of other Jobs and Skills Councils.

¹ Australian Bureau of Statistics (2023) Labour Force Survey

² NOTE: The water transport workforce is a sub-category of all domestic seafarers and related figures are presented as merely representative of the broader maritime workforce. The ANZSCO codes do not accurately capture the workforce size. For example, Marine Engineers are only counted from Diploma level and up which misrepresents the size of the employed marine engineers. Industrial and workforce data relating to tourism, marine rescue, fishing, aquaculture and other industries that utilise the Maritime Training Products are not captured. Domestic seafarer data as provided by AMSA suggests there are about 22,000 commercial domestic vessels and the true workforce size could be as high as 66,000.

³ IBISWorld Industry Wizard (2023)

⁴ Australian Bureau of Statistics (2021) '2021 Census - Employment, income and education', TableBuilder

⁵ Australian Bureau of Statistics (2023) Labour Force Survey

Key issues and drivers affecting the Maritime workforce

We need to be planning now for large scale projects involving the maritime workforce

Upcoming national infrastructure projects requiring workers from the maritime industry will provide numerous economic benefits to Australia, as well as challenges for the creation of qualified and on-going workforce to operate and maintain the projects. These projects will include the crewing, operation, and maintenance of:

- vessels associated with the proposed maritime strategic fleet.
- renewable energies including wind farms.
- offshore commissioning and decommissioning.

The long lead times for seafarers to become Standards of Training, Certification and Watchkeeping (STCW) AMSA certified makes it critical to start planning now for maritime projects and training the workers who will be needed. For example, it can take up to 10 years for Engineering and Deck Officer job roles to become AMSA certified.

With shortages of seafarers (Ratings, Engineers, and Masters) already being experienced, along with challenges in attracting and retaining workers, industry stakeholders have raised concerns about the workforce's capability to support these projects.

A model for planning the workforce and skills requirements for these projects is needed. ISA will conduct further research and stakeholder consultation to determine the best approach to developing a planning model.

The cost of delivering AMSA certified qualifications is creating a barrier to the skills pipeline for STCW occupations

AMSA-approved training providers are required to demonstrate they meet IMO (International Maritime Organization) requirements relevant to their training assessment system including methods of delivery, assessment instruments, Recognition of Prior Learning (RPL) processes, industry certification for assessors, equipment, and simulators.

Research shows that for training providers to register, develop, and maintain training courses to meet highly specialised and technical job skills with stringent regulatory requirements, significant investment is required. Their ability to achieve economies of scale, and thereby provide cost-effective training opportunities, is challenged when enrolment numbers are low and can result in a lack of training delivery in specific regions and specific skill areas. Industry stakeholders are reporting impacts such as limited numbers of approved STCW training providers, limited delivery locations, increased costs for seafarers (enrolment

fees, and/or additional course costs such as travel and accommodation), limited training intakes and lack of innovative delivery models.

While there is a strong relationship between the achievement of an AMSA certification and employment outcomes, there is also an ongoing need for stakeholders, including governments and industry, to explore fair and equitable funding models that make it viable for training providers and cost effective for seafarers. This is an area that requires further research and stakeholder consultation.

The inability to complete qualifying seagoing service to achieve AMSA certification makes it critical to start working on solutions to maximise training berths

To be eligible to receive AMSA certification to work in the industry, a seafarer needs to complete a specified amount of qualifying seagoing service ('sea time') on a vessel. Without completing qualifying sea service, seafarers are unable to be AMSA certified and are unable to work in the industry.

Stakeholders are reporting that the decline of Australian flagged vessels in favour of foreign flagged and crewed vessels has impacted seafarers' access to vessels and their capacity to complete sea time to achieve STCW certification. Research shows that COVID-imposed restrictions in response to the pandemic have also limited the opportunity for seafarers to complete their certification, and industry stakeholders are reporting that the lack of co-ordination across industry and training providers has resulted in sea time (training berths) not being effectively utilised.

The complexities and rigor of meeting sea service requirements do not allow for a one size fits all approach to addressing sea service requirements. We need to work with industry and training providers to develop a model that plans for, identifies, manages, and expands the number of training berths. This is an area that will need further stakeholder consultation.

Recent regulatory changes will require amendments to the Maritime Training Products

A new maritime regulation known as Marine Order 505 (Certificates of competency – National Law) for domestic commercial vessels came into effect on 1 January 2023, following industry consultation over a two-year period. This has resulted in changes to AMSA Certificates of Competency.

ISA is well placed to implement a number of strategies to support these changes, including:

- updating training products for Near Coastal job roles to reflect the new Marine Order 505 licencing and regulatory requirements.
- developing a new training product for workers to achieve the new licencing category Coxswain Grade 3 to support occupational mobility for existing workers in the maritime industry.

- establishing communities of practice and working with AMSA approved providers to align their training and assessment system with MO505 requirements.
- developing guidelines for AMSA approved providers to understand transition arrangements from previous updated qualifications (National Standards for Commercial Vessels) to Marine Order 505.

New technology and carbon emission reduction strategies on the horizon will have skill implications in the future

The International Maritime Organization (IMO) has adopted measures to reduce emissions of greenhouse gases from international shipping as a matter of urgency ('IMO Decarbonisation policy'). The adoption of cleaner fuels, such as liquefied natural gas (LNG), biofuels and new, low-carbon technologies are being promoted by the IMO.

In response, industry has been exploring innovative ways to reduce its carbon footprint. Several new technologies and alternative fuel technologies have been developed and are currently being trialled. While there is a level of uncertainty around the uptake and viability of new technologies, their implementation and internationally agreed timeframes have implications for seafarer skills and training.

We will continue to monitor these developments and review outcomes of new technology trials and member state IMO authorised decarbonisation projects, such as the Future Fuels and Technology for Low-and-Zero- Carbon Shipping Project, to identify skill and training implications.

Common issues and themes across ISA industry sectors

We have identified four common issues and themes that are impacting the industries supported by ISA.

Technology and Automation

Automation and digital technologies are revolutionising industries and reshaping business operations. In transport and logistics, [robotics](#), drones and [big data](#) analytics are optimising operations and improving productivity. Autonomous trucks have been recently [tried](#) in Australia and autonomous vessels trialed in the maritime industry, with some already in [operation](#). The rail sector is operating autonomous trains, using smart devices and conducting automated asset inspections using LiDAR. In the aviation sector, cutting-edge technologies such as uncrewed aircraft systems, [remote digital tower](#) technology, [OneSky](#) and satellite based augmentation systems are being implemented.

Despite these changes, the role of humans in operating and maintaining systems remains highly significant, and workers will need the technical [skills](#) to work safely with these new technologies.

Sustainability

The adoption of sustainable practices and technologies to reduce Australia's carbon emissions has been gaining pace, and the industries we support are well [positioned](#) to be key enablers of this change. For example, the supply chain sector is relying more on autonomous technology and alternative fuels such as hydrogen to reduce its carbon footprint. Trials for zero-emissions hydrogen fuel-cell battery trucks are already [underway](#) in Australia, as are [trials](#) of alternative fuels in the maritime industry. The aviation industry is working towards the [replacement](#) of ground equipment with hydrogen powered fuel cells, while the rail industry is focused on technologies such as hydrogen or battery electric to phase out diesel trains.

Once again, these changes will require workers to have the skills and knowledge to safely work with these technologies and comply with regulations.

Workforce Challenges

Australia is grappling with significant labour shortages across many industries, including those supported by ISA. There is both a general [shortage](#) of skills, as well as a slowing down of skilled migration as a result of border closures due to the pandemic. Ongoing impacts are likely to be seen in terms of business operations and the [completion of infrastructure](#) projects.

Globally, organisations have started to prioritise the [attraction and retention](#) of new talents. Similarly, Australian businesses are investing in staff training, developing skills, and attracting [young people](#) and more [women](#) into traditionally male-dominated industries and occupations.

Industry Skills Development

The Vocational Education and Training (VET) system in Australia is well positioned to supply the skills and knowledge required for the future of work. However, barriers such as [perceptions of the VET sector](#) and shortages of qualified trainers are impacting on the attractiveness of the sector to prospective learners and on learner outcomes. The challenges are even greater in [regional and remote areas](#), where lack of high-quality training facilities, up-to-date equipment and training providers further compound the situation. Establishment of clearer career pathways and articulation arrangements that enable learners to seamlessly transition from the schools sector into VET and onwards to Higher Education are needed to build opportunities for individuals and support the shift to higher skilled job roles.



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