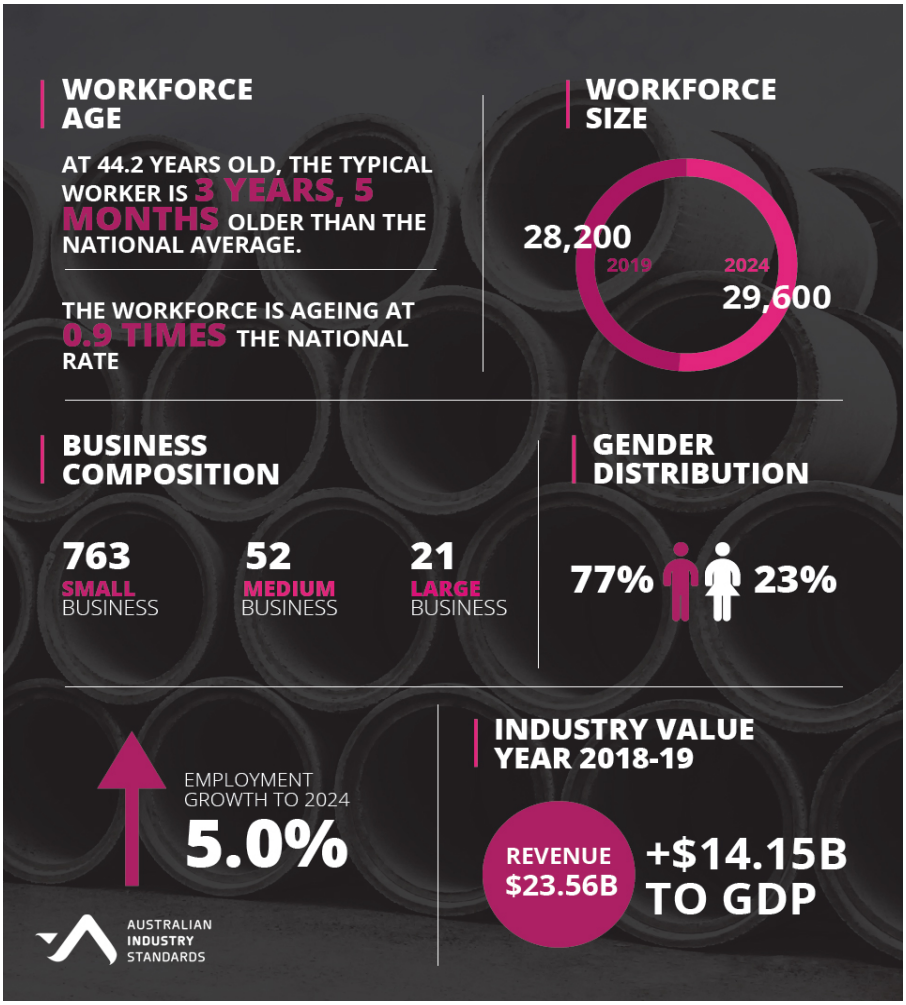
SUMMARY

The Water Industry Reference Committee (IRC) Skills Forecast identifies the priority skill needs of the Water industry following research and stakeholder consultation.

The IRC, made up of industry leaders and experts, acts as a conduit between the Water industry and the Australian Industry and Skills Committee (AISC). It proposes Training Package development work to ensure that skills standards and qualifications are contemporary, as well as future focused, to meet the skill needs of industry.

INDUSTRY TRENDS AND OVERVIEW

The Water industry in Australia has an estimated annual revenue of $23.56 billion, adding $14.15 billion to the Australian economy in 2018. The industry employs over 28,000 people across its sub-sectors: water supply, sewerage, drainage services and - pipeline transport (water).



INDUSTRY CHALLENGES AND OPPORTUNITIES

The Water industry provides vital services that are fundamental to our national prosperity and economic growth, providing water and sewerage systems to households and businesses, and irrigation water in agriculture.

TECHNOLOGY AND AUTOMATION

Emerging technologies offer a wide range of opportunities and benefits to save costs, improve services, and increase efficiency. The water industry is adopting new technologies and innovative approaches towards the treatment of water, water catchment, and asset management. These changes continue to have far-reaching effects on the way water is delivered to highly urbanised regions, commercial zones, and rural/regional locations, as well as industry skills required by the workforce. The industry is also advancing through systems automation, creating many opportunities to streamline processes and improve the cost-effectiveness of water management practices. Adoption of digital and automated meter reading technologies will enable improved water consumption management and enhance the customer experience.

DIGITALISATION AND DATA

Water companies are deploying remote IoT monitoring for asset management. This technology collects additional data through sensors and smart devices which provide a better understanding of asset condition which can, in turn, reduce asset-related failures or disruptions to water supply. Smart monitoring systems provide real-time data, allowing timely response to faults which improves the safety and efficiency of operations and enhances customer service. This data may be used to improve management decision outcomes through faster data acquisition, with higher quality data analysis to make operations more cost efficient and customer-focused. Big Data can also enable water pipe failure prediction, customer demand analysis, sewer corrosion, and chokes prediction.

WATER TREATMENT INNOVATIONS

New advancements in technology are reshaping the way water and wastewater is treated. Water treatment processes are also being overhauled with new techniques aided by solar power. New treatment techniques employ sunlight power to remove micropollutants. Another world-first Australian new technology uses atomically thin sheets with multilayered structures, through which water flows to be purified. This method is highly cost effective and energy efficient.

INDUSTRY-SPECIFIC CYBER SECURITY

Cyberattacks are a common risk to many industries including the Water sector. The unique nature of Water technologies and innovations such as Big Data, IoT, and automation creates large amounts of data which can expose the industry to growing cyber security risks. It is imperative to have a tailored cyber security training program to give the workforce the skills and competencies to be able to identify, block or remediate against any malicious cyberattacks.

DIGITAL LITERACY

Advancements in Artificial Intelligence, computer technology, automation, the Internet of Things, cloud computing, big data, and customer-service platforms are generating a massive volume of data and information, offering a range of benefits such as improved customer service and operational efficiency. Demand for analytical skills, digital literacy, and information management will continue to rise, making digital literacy one of the most significant areas for the new and existing workforce.

AGEING WORKFORCE AND GENDER DIVERSITY

The water industry of Australia has a large proportion (36 per cent) of its workforce aged over 50, projected to retire in the next 10-15 years. Attraction and recruitment of new employees, who can be mentored by experienced staff, will help companies to retain industry knowledge as people leave the industry. The average rate of female participation has grown by 2.1 per cent since 1988. The current workforce gender composition is approximately 25 per cent female. Workplace diversity is recognised as a way to sustainably respond to industry challenges and improve organisational performance by creating better quality outcomes and improved employee engagement.

SKILLS RELATED INSIGHTS AND OUTLOOK

Over 26 per cent of respondents reported experiencing a skills shortage in the last 12 months. The occupations reported as being in shortage were: water/wastewater treatment operators, maintenance, engineers, water quality management, and managers. The Water industry employers identified the following reasons for the shortage:

1. Wages / salaries considered too low
2. Competition from other organisations
3. Geographic location of the vacancy
4. Ageing workforce / current staff retiring
5. Unattractive job / poor industry image

NWP WATER TRAINING PACKAGE

The NWP National Water Training Package provides the only nationally recognised Vocational Education and Training (VET) qualifications for occupations involved in water industry operations (generalist, treatment, networks, source, irrigation, hydrography, trade waste), treatment (drinking water, waste water) and irrigation. The NWP National Water Training Package comprises 7 qualifications, 10 Skill Sets and 168 Units of Competency and associated assessment requirements and covers water supply, sewerage, drainage services and pipeline transport (water).

PROPOSED TRAINING PACKAGE REVIEW AND DEVELOPMENT – PRIORITY WORK

*The following projects were proposed and submitted to Australian Industry and Skills Commission for consideration on 30 April 2019.

2019-20 WATER INDUSTRY OPERATIONS - REVIEW AND DEVELOPMENT

This project will review and develop the NWP40515 Certificate IV in Water Industry Operations qualification and 19 Units of Competency. This project will also update any associated Water Skill Sets that utilise the units contained within scope of this project.

2019-20 WATER INDUSTRY TREATMENT - REVIEW AND DEVELOPMENT

This project will review and develop the NWP40615 - Certificate IV in Water Industry Treatment and 12 Units of Competency and may develop up to four new Units of Competency.

The full Water IRC Skills Forecast can be accessed at:
https://www.australianindustrystandards.org.au/industry-reference-committee-irc-skills-forecasts-2019/

AUSTRALIAN INDUSTRY STANDARDS

Australian Industry Standards (AIS) is a Government appointed Skills Service Organisation (SSO) that partners with industry to shape the workforce of the future through the development of skills standards.

We work under the direction of Industry Reference Committees that represent the following sectors: aviation, transport and logistics, maritime, energy, water and utilities, public safety, police, fire, defence and corrections. Together, these industries keep Australia productive, powered and secure.

AIS supports IRCs through industry engagement, research and analysis to prioritise the skill needs of their industry. We help to develop contemporary, future focused and world class qualifications for the workforce, create career pathways, and support industry growth and productivity.

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Australian Government
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