

OFFICIAL

Alkimos Seawater Desalination Plant

SUSTAINABILITY



Alkimos Seawater Desalination Plant



Project overview

Due to a reduction in rainfall and an increase in population, Western Australia needs a new major water source. We are building the Alkimos Seawater Desalination Plant (ASDP) to produce millions of litres of clean, safe drinking water to millions of Western Australians each year, with the first water production due in 2028.

The project includes:

- The design, construction, operation and maintenance of a 50 billion litres per year desalination plant within the Alkimos Water Precinct. This includes future-proofed infrastructure to later increase capacity by another 50 billion litres per year with further investment.
- Two underground marine pipelines, including an intake pipeline to take seawater into the plant and an outflow pipeline to return the brine (concentrated salty water) back into the ocean.

Water Corporation has formed an alliance with Acciona and Jacobs Group to design, construct and operate the new desalination plant. Known as the *Alkimos SeaWater Alliance* (ASWA), the group brings together experts in the delivery and operation of water infrastructure.

There will be related infrastructure that is connected to the ASDP delivered by different contractors and/or alliance partners. As this sits outside of the Alkimos Water Precinct, they will have their own sustainability goals. This infrastructure includes the Alkimos to Wanneroo pipeline, the power supply upgrade to the Alkimos Water Precinct and several smaller projects across Perth upgrade the capacity of the existing network.

Our sustainability commitment

We are committed to embedding sustainable project outcomes for the local community and environment, while providing a key asset in sustaining Perth's future as a liveable waterwise city.

An independent third-party rating scheme, managed by the [Infrastructure Sustainability Council](#) will be used for the project's sustainability evaluation:

The project has committed to achieving an Infrastructure Sustainability Silver rating for the Alkimos Seawater Desalination Plant project certified as [Design and As-Built](#) phases.

Sustainability targets

Sustainability targets guide the direction of sustainability across the whole of the project life. Preliminary targets have been set for the operational phase, these targets will continue to be refined and finalised closer to project completion.

The ASWA project team has identified sustainability focus areas, objectives and developed targets aligned with the [United Nations Sustainable Development Goals](#) (UNSDGs).

Our vision

'Together, safely delivering a sustainable solution that secures water for a thriving WA community now and into the future.'

Alkimos Seawater Desalination Plant



Focus area: Great and safe place to work



Promote good physical and mental health and wellbeing

- Achieve at least 60% participation in Alliance 'pulse check' surveys for Culture and Wellbeing and Diversity and Inclusion throughout design, construction and operation
- Improve on at least two culture and wellbeing issues from the previous year during construction and operation

Promote diversity and inclusion

- Maintain a 10% female participation rate in roles within the construction industry where females comprise 25% or less of total employment through design and construction
- 25% of senior management positions are held by females during operation
- Identify, implement and maintain actions to improve workplace culture with consideration of groups underrepresented in the construction industry including culturally and linguistically diverse (CALD) people, refugees, people with disabilities and the LGBTQI+ community during design, construction and operation
- 100% of management and supervisory roles participate in diversity and inclusion training bi-annually during design, construction and operation
- Identify partnership with a registered charity that aligns with workforce objectives and fundraise annually during design and construction
- Develop and implement a flexible working procedure to consider the needs of carers, cultural requirements, and people with disabilities

Upskill local current and future workforce

- Develop and implement Alliance mentoring program
- Identify and implement at least one program or policy to support the employment of groups under-represented in the infrastructure industry during design, construction and operation
- Maintain a training rate of 11.5% for apprentices and trainees during construction

Prioritise workforce safety in all phases

- Promote a culture of safety during the design phase by implementing the safety in design process, including the consideration of human factors
- 0 lost time injuries during construction and operation

Alkimos Seawater Desalination Plant



Focus area: Protect Alkimos natural environment



Minimise impacts to onshore environmental values

- Plan and undertake work in compliance with environmental approval requirements during design, construction and operation

Minimise impacts to marine life, water quality, flora and fauna

- Plan and undertake work in compliance with environmental approval requirements during design, construction and operation

Local positive land and water impacts through project initiatives

- Identify at least five opportunities, and implement and maintain as least one (1) opportunity to locally enhance terrestrial and marine environmental values during design, construction and operation

Alkimos Seawater Desalination Plant



Focus area: Maximise resource efficiency, reduce carbon



Design, build and operate the most energy efficient plant practically possible

- Identify and investigate at least five (5) opportunities and implement at least three (3) opportunities to reduce energy use and use appropriate sources for construction and operation
- Reduce construction and operation energy consumption by 5% compared with a base case (excluding offsets)

Achieve net zero carbon footprint for Scope 1 and 2 greenhouse gas (GHG) emissions

- Develop and implement a plan to reduce and offset the remaining Scope 1 and 2 GHG emissions for construction and operation
- Achieve net zero operational scope 1 and 2 emissions for ASDP

Undertake appropriate material sourcing and minimise embodied energy

- Identify and implement at least five (5) opportunities to reduce material use and/or replace the use of virgin materials
- Achieve at least a 7.5% reduction in materials used on the Project as measured by the IS Materials Calculator (i.e. based on environmental impacts)
- Achieve at least a 5% reduction in operational materials used on the Project as measured by the IS Materials Calculator (i.e. based on environmental impacts)

Maximise circular economy outcomes including waste avoidance and reduction

- >70% office resource outputs (office and kitchen base) diverted from landfill during design, construction and operation
- Investigate at least five (5) opportunities and implement at least two (2) opportunities that contribute to circular economy principles during design and construction
- >95% clean/inert excavation spoil diverted from landfill (including >75% onsite reuse) during construction
- >80% other inert waste diverted from landfill during construction
- Investigate at least 1 opportunity to reduce, re-use or divert ferric waste sludge from landfill during operation
- >100% of lime waste sludge diverted from landfill during operation
- >25% of RO membranes diverted from landfill during operation

Maximise water use efficiency and use of appropriate sources

- Identify at least five (5) opportunities and implement at least two (2) opportunities for reducing water use or selecting appropriate sources
- Reduce construction and operational (excludes feed water) water consumption by 5% compared with a base case

Alkimos Seawater Desalination Plant



Focus area: Design for durability, resilience and the future



Provide a long lasting efficient and reliable potable water supply for the Perth community

- Identify a minimum of two (2) opportunities and identify actions to implement at least one (1) opportunity to improve community resilience associated with the Project

Consider climate change and natural hazards in design

- Identify and implement all feasible mitigations for all climate change and natural hazard risks rated as high or above
- Review and update the climate change and natural hazard risk assessment every five years during operation of the ASDP

Maximise design for future adaptation and ultimate deconstruction

- Implement design and construction requirements to achieve 25% of ASDP structural components are able to be recycled at the end of the Project life
- Review and update the Adaptability and End of Life Strategy prior to significant maintenance works during operation including updates to the end of life plan in consideration of changes to design and technology, and reuse and recycling capacity of industry.

Invest in learning, research and development

- Identify a minimum of three (3) opportunities including at least one (1) paper to present project sustainability outcomes at industry events during design and construction
- Identify and partner with a local university for research of affected terrestrial and marine flora or fauna during design and construction
- Present a published research or academic paper at a national industry or professional event (stretch target for an international event)
- Share results of a least one (1) research project in a shared environmental public database

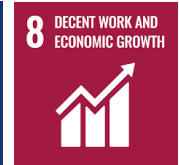
Implement holistic and transparent decision-making

- Develop and apply a decision-making framework to at least 75% of significant project decisions during design and construction and continue its use throughout operation

Alkimos Seawater Desalination Plant



Focus area: Conscious management of local and international supply chains



Promote opportunities for local suppliers and employment

- At least 50% of hours worked by design staff/contractors are worked by employees based in Western Australia during design
- During construction:
 - WA Metro - 55% of supplier/subcontractor works
 - WA Regional - 10% of supplier/subcontractor works
 - Other AU States and NZ - 15% of supplier/subcontractor works
 - Overseas - 20% of supplier/subcontractor works
- Conduct an industry briefing about contract opportunities targeted at local businesses during construction
- Investigate local supply options for operational supply materials and services
- At least 75% of hours worked by operations staff/contractors are worked by employees based in Western Australia during operation

Promote opportunities for Aboriginal businesses and employment

- Employ at least 2% Aboriginal people during design, construction and operation
- Award at least 3.5% of contracts to Aboriginal businesses by value during construction and operation

Conscious management of modern slavery risk in the supply chain

- All significant procurement packages to be assessed for modern slavery risk during design and construction
- All operational suppliers to be assessed for modern slavery risk in alignment with the Water Corporation Modern Slavery Supplier Due Diligence Framework

Maximise sustainability outcomes through partnering with suppliers early

- Commence early contractor involvement (ECI) with at least two significant subcontractors and/or suppliers in the design phase and at least one additional in the construction phase to identify and implement sustainability opportunities
- Continue partnerships with at least one significant operations supplier in the construction phase to identify and implement sustainability opportunities

Alkimos Seawater Desalination Plant



Focus area: Deliver an asset to be part of the community



Build and maintain community trust and support

- Identify and implement targeted stakeholder engagement activities, including identification of high priority stakeholder issues and facilitate stakeholder influence of more than one high priority stakeholder issue in the design
- Implement all identified stakeholder engagement activities and incorporate feedback mechanism
- 75% of Community Reference Panel (CRP) participants are satisfied that their input has been considered and positively contributed to the Project during design and construction
- Integrate lessons learned from stakeholder engagement completed during design and construction into the Operations and Maintenance Communication Plan

Positive impact to reputation of desalination through public education

- Provide at least two (2) education and learning events annually at community events, open days, shopping centres and schools during design and construction and at least one (1) annually during operation

Minimise impacts to local business and community users of onshore and offshore amenities

- Identify specific issues from the established business and user groups and develop management and mitigation measures during design
- Implement measures and two-way communication protocols to minimise impacts from construction to local business and community user groups during construction and operation

Minimise noise, vibration, air quality, light and visual impacts to the local community

- Investigate and implement methods and management measures to minimise unplanned or unexpected noise, vibration, air quality, light and visual impacts on the local community during design and construction
- Conduct monitoring for noise, vibration and air quality and achieve no recurring or major exceedances of noise, vibration, light and air quality goals during construction and operation

Maximise opportunities to promote and enhance Aboriginal values via engagement

- Identify, investigate during design and implement during construction at least one (1) heritage enhancement opportunity
- Maintain the heritage environmental enhancement initiative during operation