

Desalination in the south-east: the Bribie Island project



Using desalination to climate proof Queensland

The earth's climate is changing and we must ensure the south-east's water supplies are always secure. Desalination relies on the endless supply of seawater and is therefore immune to rainfall fluctuations, providing South East Queensland with reliable climate independent water. The ClimateProof SEQ Water Policy lists the construction of a desalination plant as step one in the strategy for securing ample, reliable water supplies, which will see the south-east off harsh water restrictions sooner than any other plan.

Desalination used throughout Queensland

Desalination is successfully used worldwide in countries such as Israel and Singapore, and Australia is now embracing this technology to take advantage of our abundant seawater. Perth's desalination plant is operational, and the Tugun plant on the Gold Coast is under construction. There are another 20 desalination plants throughout Queensland, including five on the Torres Strait Islands and one on Hamilton Island, with a groundwater desalination plant at Dalby. Both New South Wales and Victoria have revealed plans for desalination.

The best location: Bribie Island

Numerous critical factors must be considered when selecting an appropriate site for a desalination plant, including water quality, water depth, tidal flows, proximity to residential areas and distance to large population pockets. Several sites were considered by the State Opposition, but Bribie Island was the one location that clearly met all the right criteria. There were other positive factors which helped identify Bribie Island as the most appropriate location:

- The plant will be built on secluded Government owned land
- Bribie Island is close to the booming population of Moreton Bay Regional Shire, whose water demand will steadily grow as the population reaches more than half a million people by 2026
- The plant's power lines and water pipelines will predominantly use existing easements
- Water is heavy and expensive to pump. Water from the

Bribie Island plant will connect to Stage 1 of the Northern Pipeline Interconnector which is nearing completion, providing water security without expensive, long pumping distances



Membranes used at desalination plants as part of the reverse osmosis procedure.

Prioritising the environment's health

Every effort will be taken to safeguard Bribie Island's environment, beauty and marine life. A thorough environmental impact statement will be prepared for the proposed desalination site. Continual environmental monitoring will occur once the plant is operational, ensuring ongoing accountability to community members and stakeholders. The plant will also be built according to world's best practice, using the latest environmentally friendly techniques to protect marine life, while the deep water and strong tidal currents in the Moreton Bay shipping channel ensure brine is quickly and safely dispersed. Other chemicals used to clean the pipes will be placed into secure land fill instead of being discharged into the ocean.



A commitment to renewable energy

Government reports show that more energy is used to treat recycled water and pump it into Brisbane's dams than to run a desalination plant. The Bribie Island plant will use 100% renewable energy. New forms of renewable energy will be created within the Queensland power grid to supply the plant.

It is estimated that the plant will require an average of 25 megawatts of power per day to operate – equivalent to approximately every home in South East Queensland running a single 60-watt light bulb for less than nine hours a day.

The Bribie Island Marine Park will be protected

The waters surrounding Bribie Island are classified into four zones: general use, habitat protection, conservation park and marine national park. The desalination pipes will reach into the general use zone, which has water depths of 11-15 metres, protecting the fragile water zones. This desalination plant will use the reverse osmosis process which is a much more environmentally friendly technique where the brine discharged is quickly dispersed, contains no chemicals and has a minimal temperature variation of approximately one degree. Other similar desalination plants have intake pipes so safe that fish freely swim in and out.

Listening to Bribie Island's residents

The State Opposition understands that no one wants to live next door to a desalination plant. That is why extensive community consultation will occur with community and environmental groups to help choose the exact location on the island for the plant. Several possible sites have been earmarked, but the final decision will be made in conjunction with industry experts and the community.

Desalination plants consist of several buildings over 10 hectares, with intake and outtake tunnels into the ocean. The tunnels are located metres under the ocean's surface and will not be visible once they are built.

Taste and quality: no compromise

The desalination process removes salts and other impurities from sea water to produce water so pure that minerals and other elements need to be added back in for it to match the quality of general dam water.



The view from Bribie Island into Moreton Bay won't change once the desalination plant has been built.

Need more information?



**Queensland
Opposition**

www.climateproof.com.au

Phone: (07) 3406 7997

Email: climateproof@opposition.qld.gov.au

Together, we'll build a better Queensland