

# Tuas Desalination Plant

## 01 SEAWATER INTAKE

Seawater is drawn into the plant through a huge underwater pipe.

## 02 SCREENING

Seawater undergoes a two-stage mechanical filtration to remove coarse and fine particles.

## 03 DISSOLVED AIR FLOTATION

Chemicals are added to agglomerate impurities into bigger particles, and fine air bubbles are pumped in to float these particles to the surface for easy removal as part of the clarification process.

## 04 ULTRAFILTRATION

The clarified seawater passes through semi-permeable membranes to remove impurities, microorganisms and bacteria of smaller sizes.

## 05 REVERSE OSMOSIS

The pre-treated seawater is pumped at high-pressure through these semi-permeable membranes to separate dissolved solids. The same technology is used in the NEWater process.

## 06 POST TREATMENT

The treated water is made potable by adding chemicals such as chlorine and fluoride, similar to post treatment processes at Waterworks.

Desalination is an important source of water supply for Singapore. With Tuas Desalination Plant, we can meet up to 30% of Singapore's water needs.

Tuas Desalination Plant is the first in Singapore to use advanced pre-treatment technology, a combination of dissolved air flotation and ultrafiltration.

It is the first desalination plant to be owned and operated by PUB.

It is the first desalination plant in Singapore fitted with solar panels, with more than half of the total roof area covered by solar panels.



**30mgd**

TUAS DESALINATION PLANT  
can supply enough water to  
**200,000**  
households 

# Securing water for Singapore's future water needs

The threats of climate change bring new challenges to our water supply. While dealing with climate change, there is also a need to cater for rising water demand, projected to double by 2060.

Singapore's future water security lies with desalination and reuse. These rainfall-independent sources of water will also help to reduce our vulnerability to weather uncertainties.

The Tuas Desalination Plant will boost desalination capacity from the current 100mgd to 130mgd, meeting up to 30% of Singapore's current water demand. By 2060, desalination is expected to meet up to 30% of Singapore's future water needs.

# SINGAPORE'S Desalination Journey



2005  
SingSpring  
Desalination  
Plant  
30mgd

2013  
Tuaspring  
Desalination  
Plant  
70mgd

2018  
Tuas  
Desalination  
Plant  
30mgd

2020  
Marina East  
Desalination  
Plant

2020  
Jurong Island  
Desalination  
Plant

Desalination will meet up to  
**30%**  
of Singapore's  
future water needs by  
**2060**