

# Making sea water drinkable

Two ways desalination plants turn salt water into drinking water are distillation and reverse osmosis. Distillation heats the water until it becomes steam.

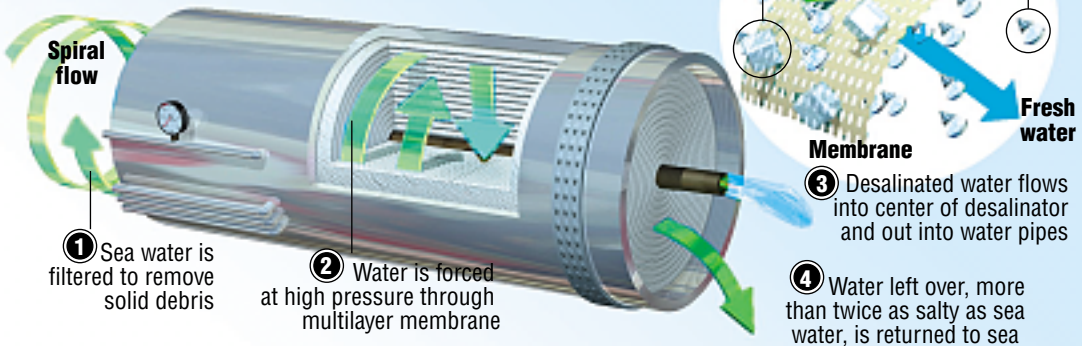
Steam is collected and cooled in a separate container leaving the salt behind. Reverse osmosis uses a series of membranes to filter the water.

## How reverse osmosis works

Most common desalination technology; forcing sea water through super-fine filters removes salt and other minerals

Molecules of salt and other chemicals are too large to pass through membrane

Water molecules pass through easily



## Problem: desalination is expensive

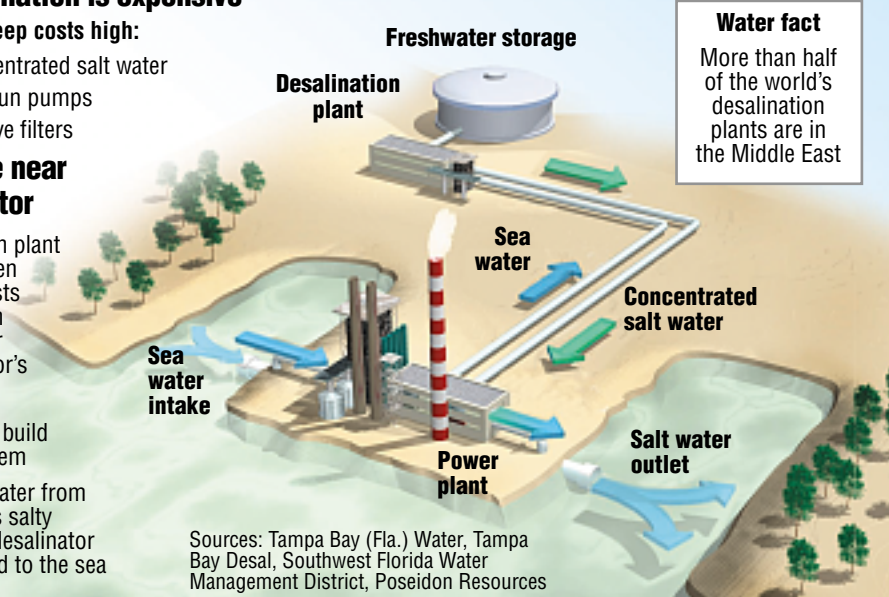
Some factors that keep costs high:

- Disposing of concentrated salt water
- Buying energy to run pumps
- Replacing expensive filters

## Solution: locate near a power generator

Locating desalination plant next to a steam-driven power plant cuts costs because desalination plant can draw water from power generator's cooling system

- Eliminates need to build a water intake system
- Large outflow of water from power plant dilutes salty concentrate from desalinator before it is returned to the sea



### Water fact

More than half of the world's desalination plants are in the Middle East

Sources: Tampa Bay (Fla.) Water, Tampa Bay Desal, Southwest Florida Water Management District, Poseidon Resources