

# Abstract

As a result of population growth and global warming, resources are becoming increasingly scarce. And the most fundamental resource without which no living being can live is water. It is one of the resources that we have in abundance on our planet, but it is very unevenly distributed due to multiple factors such as war, population displacements, drought in some regions ... More than 97.5% of the water on earth is salty and contained in the oceans and only 35.2 million billion cubic meters are fresh water, less than half of which is liquid. Our objective is therefore to exploit this huge quantity of salt water, which is still too little used, to provide cities or countries with water problems with drinking water at a lower price. For this purpose, we have compared several desalination systems: Multi-Flash Desalination, Multi-Effect Distillation, Mechanical Vapour Compression and Reverse Osmosis. Following this study, we were able to deduce that the reverse osmosis system best meets our expectations in terms of quantity and simplicity of production as well as its cost.