

## **Water production**

Water is a necessary condition for the existence of living organisms and a basic raw material for the functioning human society. The relative abundance of water in our environment compels us to think about the possibility that we ever had a shortage. In many countries, however, is pure water of a luxury, which not everyone can afford. According to OSN statistics, more than a billion people have short access to safe drinking water. Reasons for the lack of drinking water in the world are a lot. It is for example depletion of water resources by irrigation, absence of water resources in the area, or loss of the ability to retain water landscape.

This year's worldwide water consumption exceeds 4 765 000 mld. litres. 715 500 000 people are without access to drinking water worldwide. So it is important to find a way to produce more drinking water.

Drinking water can be produced from any natural sources like groundwater, lakes and rivers (surface waters) or seawater. Different approaches can often complement each other. For example, by 2050 the countries in the Middle East and North Africa region are expected to meet 18 percent of their fresh water demand through increased efficiency of obtaining, 14 percent through reuse of wastewater and 22 percent through solar powered desalination.

Treating wastewater for reuse is the most energy-efficient way of reclaiming water for consumption. There are three ways to wastewater treatment: first of them is mechanical cleaning (like sedimentation), second is chemical cleaning and third is biological cleaning (using bacteria). Often all three methods combine. But there are many other ways how to produce water. One of them is seawater desalination. Just desalination can be a solution to the problem of water shortage. The problem of seawater desalination is energy demands. There are more ways to desalination of seawater. For example distillation, chilling or electrodialysis.

Water is the most important element for all living organisms, in addition, it is also used in the power generation. The vast majority of water used in the energy sector is for cooling at thermal power plants. Water withdrawal by the energy sector is expected to rise by one fifth by 2035. What does it mean for the future energy supply? Given the location-specific nature of water resources, this question must be considered at the water basin level, or even at particular sites. And the development of unconventional oil and gas resources, which

raises notable water-quality risks, will be challenged to follow high standards that commit industry to continually improving environmental performance.

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Sources:

*[www.globalopportunitynetwork.org](http://www.globalopportunitynetwork.org)*

*[www.nazeleno.cz](http://www.nazeleno.cz)*

*[www.worldometers.info](http://www.worldometers.info)*