

# "The only practical option for [north Chilean mines] ... is seawater desalination"

Mines located in water-scarce areas are turning to desalinated seawater



**Infrastructure > Natural-resources** While in some ways Chile is a country rich in water resources, with more than 50,000m<sup>3</sup> of water available per person per year, its most populated cities and mining areas in the north are located far from them.

Comments Indeed, Chile's Atacama Desert is commonly known as one of the driest places on earth. Mining companies have nevertheless been allowed to purchase permits to use water from an aquifer under the area.

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**Nia Kajastie**

The Chilean government has been working on stricter water policies since 2014, including a bill to make the use of seawater mandatory in large-scale mining projects.



In August of last year, Reuters reported that the country was working on new water extraction restrictions in the Atacama region.

The head of the country's water authority DGA, Oscar Cristi, reportedly told Reuters that miners had been permitted to pump six times more water than the aquifer could sustain. Accordingly, there is now a ban in place on new pumping permits in a key section of the watershed, in use particularly by miners BHP and Antofagasta.

Earlier this year, as reported by Bloomberg, in response to complaints from communities regarding miners drying freshwater sources, the DGA said it is aiming to make it more difficult for them to access water by more than doubling prohibition zones throughout the country from 30 to at least 70.

As a result of these restrictions, the use of seawater desalination plants has increased considerably over the past decade. According to research by state copper commission Cochilco, water supplied this way is set to triple by 2029.

"The only practical option for mining projects in the north of Chile currently is seawater desalination," Guy Sagie, CEO of IDE Projects, told *MM*.

"In Chile especially, new mining projects and expansions of existing mining projects in water-scarce areas are increasingly declaring that they plan to source freshwater from a desalination plant in their environmental permits, and therefore there is a higher demand for such desalination solutions."



### Teck taps IDE for Quebrada Blanca desalination plant...

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Water treatment specialist IDE Technologies was recently commissioned by Teck Resources to design and supply a desalination plant for the miner's Quebrada Blanca extension project (Phase 2, or QB2).

The new seawater reverse osmosis (SWRO) desalination plant will be located at the port site for the QB2 copper mine and will also form the first instance of large-scale use of desalinated seawater at a mining operation in the Tarapacá region.

IDE also said it will be the second largest plant of its kind in Chile and will provide 102,360m<sup>3</sup> of high-quality freshwater per day to be used in the copper production process.

"In recent years, IDE Technologies has presented several solutions aiming to minimise environmental impact by both creating chemical-free desalination, and introducing more efficient operation with lower power consumption," Sagie said.

Stricter environmental regulations also force miners to treat mine effluents before discharge.

"One of the greatest challenges facing the water industry is handling the brine or industrial effluents that are by-products of other water treatment processes or industrial facilities. These water types are characterised by challenging water chemistry, which in turn limits the ability to reach high recoveries due to the risk of scaling and fouling," Sagie explained.

IDE's MAXH2O Desalter is a RO technology that, according to the company, can minimise the brine and industrial effluents volume by eliminating the constraints of water chemistry, thus maximising the mechanical potential of the RO process and achieving higher recovery rates.



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