

# AIR Bhd's compact water treatment system gains recognition

*Potential of seawater desalination becoming potable water is escalating, especially with advanced technology in the desalination*

by FAREZZA HANUM RASHID

**ALIRAN** Ihsan Resources Bhd (AIR Bhd), a member of MMC Group, has recently produced potable water for Syarikat Air Melaka Bhd under its Containerised Seawater Reverse Osmosis Desalination Systems project.

This milestone has gained recognition from the Malaysian Water Engineers Action Committee (MYWAC) during its technical visit on Dec 12 to 15 last year, in conjunction with MYWAC's annual meeting at Pulau Besar in Melaka, with representatives from water operator companies nationwide.

With the presence of water operators from all over the country, AIR Bhd took the opportunity to share its knowledge and skills in Seawater Reverse Osmosis (SWRO) including, among others, its experience in implementing the operation of ultra filtration system UF and SWRO at Melaka's Pulau Besar Water Plant.

AIR Bhd shared that the potential of seawater desalination becoming potable water is escalating, especially with advanced technology in the desalination system, which is helping to shape its role in the clean water supply.

"A seawater pre-treatment system is a vital key component of every membrane desalination plant. The main function of the pre-treatment system is to remove particulate, colloidal, organic and microbiological contaminants contained in the raw seawater and to prevent their accumulation in the downstream of the SWRO membranes," AIR Bhd said in a recent statement, adding that the seawater reverse technology has emerged especially with the latest electricity reduction invention of the Energy Recovery Device application.

AIR Bhd has also made the SWRO system easy for shipment and site installation by packaging it into containers, creating an opportune environment for its client.

The materials used were selected to withstand the highly saline seawater in which Duplex Stainless Steel applies for the high-pressure section and marine-grade epoxy has made up the flooring and the container's wall for high durability protection.

The containers come with safety shower devices, overhead lighting, one-man side doors for easy personnel access and pre-built utility tie-in points for hassle-free connections at sites.

"All these are equipped without compromising any compliance to seaworthiness and national shipping standards and regulations," AIR Bhd explained.

The company stressed that although it compacts all essential equipment, parts and components into a constrained space, there is no compromise on standards or compliance where adequate spaces required for operations and services and maintenance are concerned.

"AIR Bhd intelligently utilises any space available within the containers by fitting the equipment, parts and components against the inner walls, running pipes and cables hanging from the ceilings and other parts of the con-



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tainers to optimise the use of space," it said.

The water operator company optimises space by incorporating all the RO membrane housings and other integral equipment, parts and components into a constrained space of a container to produce the potable water.

"Making sure that the space is optimised for service and maintenance is harder than you might think.

"It needs not only flexible expertise and established engineering experiences, but it also requires out-of-the-box creativity and innovative strife," AIR Bhd said.

Creativity and innovation have allowed AIR Bhd to use limited space in an unlimited way, such as taking in seawater into the compact containerised SWRO systems from one end

and taking out potable water from the other.

AIR Bhd's plug-and-play containerised SWRO systems can be used to purify seawater to potable standards.

"With the built-in pre-treatment systems, fitting and selecting from our various ranges of technologies has completed the system as another product that has a wide application by sectors such as municipal water operators, factory owners and on remote islands," it added.

AIR Bhd has expressed its hope that the recent visit provided a better insight on the Containerised Seawater Desalination Systems of Potable Water, allowing water operators in Malaysia to bring on this up-and-coming technology and knowledge to their respective state's water service provider.



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As the system contributes to a circular economy that could both treat most wastewater as well as treating the unlimited resource of seawater, implementation of these systems will prove Malaysia's commitment to reaching Goal 6 of the United Nations' Sustainable Development Goals, which is clean water and sanitation.

"Ultimately, this will prove that water management is a team effort among the nation's water operators and together, we can improve our country's water system as a whole.

"Our focuses will be on creating a resilient and sustainable water services industry to ensure balanced coverage and access in an effort to improve service quality, supply management, demand and operational efficiency of water services in our country," AIR Bhd concluded.

Pics courtesy of AIR Bhd