

Ceremony Held to Open Additional Facilities for Production of Desalination Membranes in Saudi Arabia

On May 29, Toyobo's joint venture in Saudi Arabia, Arabian Japanese Membrane Company, LLC (AJMC) held a ceremony to inaugurate operations at its new facility for the production of Hollosep[®] reverse osmosis (RO) membrane elements for seawater desalination.

The ceremony was attended by H.E. Dr. AbdulRahman Al-Ibrahim, Governor of Saline Water Conversion Corporation (SWCC) ; H.E. Dr. Abdullah M. Al-Shehri, Governor of Electricity & Co-generation Regulatory Authority (ECRA) ; Japan's ambassador to Saudi Arabia, Mr. Jiro Kodera; and representatives of ACWA Holding (ACWA), Toyobo's partner in the joint venture, and ITOCHU PlanTech Inc. Attending from Toyobo were Mr. Ryuzo Sakamoto, Chairman; Mr. Toshiyuki Matsui, Director; and Dr. Nobuya Fujiwara, the General Manager of Toyobo's Desalination Membrane Department.



(Ceremony to celebrate the completion)



(from right, Mr. Ryuzo Sakamoto, TOYOBO Chairman, H.E. Dr. AbdulRahman Al-Ibrahim, SWCC Governor, H.E. Dr. Abdullah M. Al-Shehri, ECRA Governor, Mr. Mohammad A. Abunayyan, ACWA Chairman)

1. Background and Objectives

At present, the Middle Eastern nations of the Arabian Gulf region are experiencing a rising demand for water because of economic development and increases in population. Along with this, the demand is also rising for construction of large-scale seawater desalination plants to replace aging plants based on the multi-stage flash (MSF) method. In addition, as part of initiatives

to restrict use of petroleum in oil producers' home countries and secure high export volumes, the ratio of desalination plants operating based on the energy-conserving RO method, as opposed to the MSF method, is rising.

In view of these circumstances, Toyobo decided to increase the production capacity at AJMC for Hollosep® RO membrane elements for desalination plants.

2. Outline of the New Facilities

(a) Location: On the grounds of AJMC's plant (in Rabigh PlusTech Park situated in the city of Rabigh)

(b) Investment: Approximately ¥600million (Total investment of approximately ¥1.2 billion)

(c) Start-up date: May 2014

3. Outline of the Joint Venture

Company name: Arabian Japanese Membrane Company, LLC (AJMC)

Date of establishment: August 2010

Paid-in capital: SAR23.6 million (Approximately ¥600 million)

Ownership: ACWA: 49%, Toyobo: 36.1%, and ItochuPlantech: 14.9%

Location: Head Office and plant: Rabigh (in Rabigh Plus Tech Park)
Marketing & Sales Office: Riyadh

Lines of business: Manufacturing and sale of RO membrane elements for seawater desalination

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Supplementary Information

The HOLLOSEP® RO Membrane Elements for Seawater Desalination

RO membrane elements for seawater desalination are core components composed of hollow fibers that desalt seawater to freshwater. The modules, which consist of RO membrane elements in a pressure vessel, are used in seawater desalination plants. The elements make use of hollow fiber membranes made of cellulose triacetate, which has superior resistance to the chlorine sterilization chemicals that are used to prevent the growth of microorganisms. These elements have been used successfully in many plants all over the world.



Toyobo's RO membrane element for seawater desalination

Major Seawater Desalination Plants Employing HOLLOSEP® Modules

Plant Name (Country)	Plant Size	Start-up Date
Ras Al Khair (Saudi Arabia)	345,000 m ³ /day	2014
Jeddah R03 (Saudi Arabia)	260,000 m ³ /day	2013
Shuqaiq-II (Saudi Arabia)	240,000 m ³ /day	2010
Rabigh (Saudi Arabia)	218,000 m ³ /day	2008
Yanbu (Saudi Arabia)	128,000 m ³ /day	1998
Jeddah (Saudi Arabia)	113,600 m ³ /day	1994
Rabigh 2(Saudi Arabia)	109,000 m ³ /day	2015
Jubail (Saudi Arabia)	85,000 m ³ /day	2007
Marafiq-Yanbu (Saudi Arabia)	50,400 m ³ /day	2005
Fukuoka (Japan)	50,000 m ³ /day	2005
Ad Dur (Bahrain)	45,500 m ³ /day	2005
Manifa (Saudi Arabia)	27,000 m ³ /day	2012