
FOR IMMEDIATE RELEASE

Hitachi and Toray to Test “Mega-ton Water System,” a Large-scale, High Efficiency Seawater Desalination System, in Saudi Arabia

MOU completed with Saline Water Conversion Corporation, a Saudi Government owned seawater desalination company and Abunayyan Trading Company.

Tokyo, Japan, May 20, 2015 --- Hitachi, Ltd. (TSE: 6501, “Hitachi”) and Toray Industries, Inc. (TSE: 3402, “Toray”) today announced that on May 5, a “Mega-ton Water Team” formed by the two companies completed a Memorandum of Understanding (“MOU”) regarding the testing of a “Mega-ton Water System,” which is a large-scale, high efficiency seawater desalination system. The MOU was completed in Riyadh, in the Kingdom of Saudi Arabia, with Saline Water Conversion Corporation (“SWCC”), a Saudi Government owned seawater desalination company, and Abunayyan Trading Company Limited (“ATC”), a water and energy related company, also in Saudi Arabia.

On May 19, Hitachi and Toray reported on the completion of the MOU to representatives of the Japanese and Saudi governments and other interested parties at the 15th Saudi Arabia-Japan Business Council (a ceremony celebrating the 60th anniversary of the start of diplomatic relations between the two countries) held at the Hotel Okura in Minato Ward, Tokyo.

The MOU stipulates that SWCC, the Mega-ton Water Team, and ATC will collaborate in the promotion and implementation of activities targeting tests using Mega-ton Water System technologies. Through these tests, the three signing parties will strive to achieve early startup of the Mega-ton Water System, which will produce one million cubic meters of fresh water per day from sea water at low costs, and with low energy consumption and minimal environmental impact.

The Mega-ton Water System is one of 30 themes adopted in the Funding Program for World-Leading Innovative R&D on Science and Technology (“FIRST Program”), which was established by the Council for Science and Technology Policy, Cabinet Office to promote cutting-edge research that strives to be the best in the world. In this program, 31 organizations including Hitachi, Toray, other private sector companies, and universities undertook research and development over period of five years, from 2009 to 2013, based on the fundamental concept of contributing to resolving the global water shortage problem. Through a Japanese initiative, these 31 organizations set the goal of establishing backbone technologies for a large-scale seawater desalination system that is internationally competitive and essential in the 21st century, and which can be operated at low costs and with low energy consumption and minimal environmental impact. In the end, this research goal was achieved.

During the course of research targeting the Mega-ton Water System, in order to attain the energy conservation levels demanded in the 21st century, Toray developed the world’s first low-pressure seawater reverse osmosis (“RO”) membranes^{*1} and monitoring technologies for bio-friendly RO pre-processing. Meanwhile, Hitachi developed an original system for increasing efficiency by

installing the RO membrane vessels (tubular pressure vessels) in two stages, as well as a modular construction method required in the construction of ultra-large scale plants. By combining these cutting-edge technologies, it will be possible to reduce environmental impact, and to reduce energy consumption by up to 20%^{*2} compared to existing systems. These technologies captured the attention of SWCC and ATC in Saudi Arabia, which has the world's largest seawater desalination market, and as a result, the upcoming test activities will be conducted in Saudi Arabia.

Hitachi and Toray are planning to conduct a pilot test of the Mega-ton Water System using a small-scale plant (water production capacity: 500 m³/day) starting in November 2015, at a site owned by SWCC in Jubail, Saudi Arabia. Hitachi and Toray will also conduct pre-test surveys subcontracted from the New Energy and Industrial Technology Development Organization ("NEDO") as part of the FY2016 "International Project for Increasing the Efficient Use of Energy and System Demonstration Project." Scheduled to last until March 2016, these pre-test surveys will target the implementation of large-scale testing operations as the next step.

Hitachi and Toray will combine the strengths of both companies – Hitachi's water treatment engineering capabilities and Toray's water treatment membrane technologies – working together in the testing and implementation of the Mega-ton Water System, in order to contribute to resolving the problem of water shortages, which is a critical issue for the 21st century.



Participants in the 15th Saudi Arabia-Japan Business Council

*1 RO Membranes: RO membrane systems, which use water treatment membranes based on the principle of Reverse Osmosis, remove ions, salts, and other impurities from water. RO membrane systems are used in seawater desalination, water purification processes, and the production of pure and ultra-pure water.

*2 Hitachi/Toray estimate, based on a comparison of a seawater desalination plant with a mega-ton scale capacity (1 million m³/day) against a conventional plant (100,000 m³/day), assuming seawater with a salinity level of 3.5%.

About Hitachi, Ltd.

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, delivers innovations that answer society's challenges with our talented team and proven experience in global markets. The company's consolidated revenues for fiscal 2014 (ended March 31, 2015) totaled 9,761 billion yen (\$81.3 billion). Hitachi is focusing more than ever on the Social Innovation Business, which includes power & infrastructure systems, information & telecommunication systems, construction machinery, high functional materials & components, automotive systems, healthcare and others. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>.

About Toray Industries, Inc.

Toray Industries, Inc. (TSE:3402), headquartered in Tokyo, Japan, is an integrated chemical industry group developing its business in 26 countries and regions worldwide. The company's consolidated revenues for fiscal 2014 (ended March 31, 2015) totaled 2,010 billion yen (\$16.7 billion). In addition to the Foundation Businesses of fibers & textiles and plastics & chemicals, Toray likewise promotes the global development of IT-related products, carbon fiber composite materials, pharmaceuticals and medical products, environment & engineering including water treatment and progress in other pivotal business fields. For more information on Toray, please visit the company's website at <http://www.toray.com>.

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