

## Lee Kuan Yew Water Prize 2014 awarded to *Orange County Water District*

*Laureate awarded for pioneering work in water reuse through scientific study,  
technological development, and public outreach efforts*

**Singapore, 18 February 2014** – The Orange County Water District (OCWD) in California, USA, has been awarded the Lee Kuan Yew Water Prize 2014 for its pioneering work in groundwater management and water reclamation using advanced water reuse technologies, as well as its achievements in public policy and community outreach. The highlight of the Singapore International Water Week, the Lee Kuan Yew Water Prize is an international water award that recognises outstanding contributions towards solving global water problems by either applying innovative technologies or implementing policies and programmes that benefit humanity.

The sixth recipient of the Lee Kuan Yew Water Prize, OCWD piloted Water Factory 21 in the 1970s, the first facility in the world to successfully demonstrate that potable-grade quality recycled water can be reliably produced from treated used water effluent through an advanced water purification system relying on reverse osmosis and granular activated carbon. Since then, based on research and demonstration efforts by OCWD, a three-stage advanced treatment process of microfiltration, reverse osmosis and ultraviolet/hydrogen peroxide has been established as the standard for potable water reuse in the industry.

With this track record, OCWD launched the Groundwater Replenishment System (GWRS) in 2008 to replace Water Factory 21. The reclaimed water that GWRS produces is injected into a series of injection wells to create a hydraulic barrier that guards against seawater intrusion, preventing contamination of drinking water wells. It also provides a new source of high-quality water for year-round recharge to the aquifer. The GWRS is currently capable of supplying 70 mgd (or 265,000 m<sup>3</sup>/d) of water, enough to meet the needs of about 600,000 people. This water supply is produced using half the energy required to pump water from Northern California – saving enough energy to power 21,000 homes each year. To date, 125 billion gallons of water (443,000 megaliters) have been produced by the GWRS.

In addition, an Independent Advisory Panel was set up comprising experts from fields such as toxicology, microbiology, public health and environmental engineering to ensure a comprehensive and sound assessment of water reuse and aquifer recharge efforts. This provides public confidence that critical aspects of the projects have been independently and scientifically scrutinized.

This comprehensive implementation model pioneered by OCWD also includes public outreach and engagement, paving the way for public acceptance of water recycling for indirect potable use. It has been replicated in countries such as Australia and Singapore, and in the states of Colorado and Texas in the United States to achieve water sustainability through water reuse, benefitting millions in the process.

The aggressive outreach campaign to garner public acceptance for GWRS started several years before the project began in 2008. From 1999 to 2007, more than 1,200 presentations about the science behind the GWRS were given to local, state and federal policymakers, business and civic leaders, health experts, environmental advocates, academia and the general public. Thousands of media impressions were secured and unanimous support for the project was received from OCWD's local, state and federal delegation.

OCWD also has a robust water education programme that includes its annual Children's Water Education Festival, the largest festival of its kind in the United States. Co-hosted by the National Water Research Institute and the Disneyland Resort, it exposes children to hands-on instruction about water and environmental issues. OCWD co-hosts the annual OC Water Summit as well, bringing together business professionals, water leaders, policy makers and scientists to discuss pressing water issues and vet possible solutions; and co-created the Water Hero Program, which inspires students to make a commitment to water conservation. OCWD staff serve on prominent and prestigious boards and expert panels that help solve global water problems, and are sought out by various national and international agencies and governments to provide expert advice and participate in important research in numerous fields, resulting in innovative technology and water projects.

Mr Tan Gee Paw, Chairman of the Lee Kuan Yew Water Prize Nominating Committee, said: "OCWD has clearly redefined the standard and demonstrated how communities can develop, implement and achieve sustainable water reuse. Their application and successful

implementation of innovative water treatment technologies, as well as water quality management and public outreach efforts, make them an international leader in this field. The GWRS has become an established blueprint for groundwater recharge and water reuse schemes, and has inspired many countries including Singapore.”

Mr. Michael R. Markus, General Manager, Orange County Water District, added: “Continuous planning, designing, building and operations of cost-effective water infrastructure projects have been core OCWD functions for more than eighty years. The community’s support of water infrastructure investments has been fundamental to helping our region sustain water supplies during severe drought conditions. We are honoured to receive the prestigious Lee Kuan Yew Water Prize and be recognized for our tradition in innovation, particularly by Singapore who, in its own right, has also drawn positive attention to the vast potential advanced water purification offers to solving global water problems.”

The Lee Kuan Yew Prize Award Ceremony and Banquet will be held at The Ritz Carlton Millenia Hotel on 2 June 2014 in conjunction with Singapore International Water Week, the World Cities Summit and Clean-Enviro Summit Singapore. The winner of the Lee Kuan Yew Water Prize 2014 will deliver the 6<sup>th</sup> Singapore Water Lecture prior to the award ceremony, where both the Water Prize and the World Cities Prize will be presented to the respective laureates.

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### **About the Lee Kuan Yew Water Prize**

Launched in 2008 to honour outstanding contributions by individuals or organisations towards solving the world's water problems by applying innovative technologies or implementing policies and programmes which benefit humanity, the Lee Kuan Yew Water Prize is the highlight of the Singapore International Water Week. Named after Singapore's first Prime Minister, Lee Kuan Yew, the Lee Kuan Yew Water Prize laureate receives S\$300,000, a certificate and a gold medallion at the award ceremony held during SIWW. The Singapore Millennium Foundation (SMF), a philanthropic body supported by Temasek Holdings, is the sponsor of the Lee Kuan Yew Water Prize.

### **About Singapore International Water Week**

The Singapore International Water Week (SIWW) is the global platform to share and co-create innovative water solutions. Comprising the Water Leaders Summit, Water Convention, Water Expo and Business Forums, Industrial Water Solutions Forum and TechXchange, it culminates in the presentation of the Lee Kuan Yew Water Prize, a prestigious international water award to recognize outstanding contributions towards solving global water problems. SIWW 2014 will feature discussions on four themes, namely: *Municipal Water*, *Industrial Water*, *Integrated City-Environment-Water*, and *Future of Water*. The sixth Singapore International Water Week will be held from 1 to 5 June 2014, in conjunction with the World Cities Summit and CleanEnviro Summit Singapore. For more information, please visit our website at [www.siww.com.sg/](http://www.siww.com.sg/)

### **About Orange County Water District**

Orange County Water District (OCWD) manages the large groundwater basin that provides reliable, high quality groundwater to 19 municipal and special water districts, serving 2.4 million customers in northern and central Orange County in California. The groundwater basin has been valued at over \$4 billion and must be sustainably managed for future generations. OCWD is committed to constantly improving Orange County's groundwater quality and reliability in an environmentally friendly way. With years of sound planning and appropriate investment in the groundwater basin, OCWD has more than doubled its output of water that has been extracted from the basin and supplied to the municipal and special water districts. The basin, which is larger than the largest reservoir in Southern California, has helped Orange County weather multi-

year droughts in Southern California. It also provides an emergency backup supply of water for citizens living outside OCWD in southern Orange County.

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