



### **Singapore International Water Week -**

The Global Platform for Water Solutions that brings together policymakers, industry leaders, experts, practitioners to address challenges, showcase technologies, discover opportunities, celebrate achievements.

The inaugural Singapore International Water Week – SIWW 2008 has received overwhelming accolades and support from global companies who see SIWW as a truly international platform to transact businesses. SIWW Founding Sponsors are now gearing up for their participation in entire spectrum of SIWW from conferences to exhibition to networking opportunities.

Meet up with these global companies to explore opportunities for technology exchange, joint venture partnership and businesses for your water and water-related projects. Make a date with the SIWW Founding Sponsors; they are all ready to engage with you! Check them out!

#### **AsahiKASEI**

##### **Asahi Kasei Chemicals**

Asahi Kasei Chemicals is one of the leading chemical manufacturing companies in the world who produces various chemical products such as organic and inorganic industrial chemicals, synthetic resin, synthetic rubber, specialty chemicals and membrane products.

The net sales of the company is US\$ 6.7 billion(Fiscal Year 2006).

Owing to its unique membrane separation technology, Asahi Kasei Chemicals is a global leader of UF/MF technology for various industries and applications such as ultra-pure water in semiconductor plants, the recovery of electro-deposition paint, pharmaceuticals, foods and so on. Currently, Asahi Kasei Chemicals is focusing its business in the field of water purification for both drinking water and sewage applications with its 'High Crystalline PVDF Membrane' providing excellent reliability and long membrane life. Asahi Kasei Chemicals has been in the leading position as a supplier of UF/MF products for worldwide water purification market with more than 600 installation references in this field all over the world, including 360,000m<sup>3</sup>/d drinking water plant in US, 191,000m<sup>3</sup>/d sewage recovery plant in Singapore and 100,000m<sup>3</sup>/d MBR plant in China.

##### **Black & Veatch**



Black & Veatch is a leading global engineering, consulting and construction company specializing in infrastructure development in energy, water, telecommunications, management consulting, federal and environmental markets. Founded in 1915, Black & Veatch develops tailored infrastructure solutions that meet clients' needs and provide sustainable benefits. With more than \$2 billion in revenue, the employee-owned company has more than 100 offices worldwide and has completed projects in more than 100 countries on six continents.

Black & Veatch's global water business provides innovative, technology-based solutions to utilities, governments and industries worldwide. Local project teams work with multinational water and wastewater treatment process experts to address site-specific challenges through a broad range of consulting, study, planning, design, design-build and construction management services.

In Singapore Black & Veatch has been involved in the development of the country's water and sanitation infrastructure for the last eight decades and is currently working on high-profile water projects, including the Marina Barrage and the ABC Waters Programme. Black & Veatch also played a leading role in the design and construction supervision of the Chestnut Avenue Waterworks and led the design and assisted with the construction and commissioning of the Tuas Seawater Desalination Plant. Both projects have received global awards.

This year, Black & Veatch opened a Global Design Centre in Singapore to provide engineering service and support to a number of global water projects and declared that its Singapore office is a "Centre of Excellence for Desalination." In February the Singapore Government presented the company the "International Headquarters" award.

## CDM



Headquartered in Cambridge, USA, and with regional headquarters in Singapore, CDM is a leader in providing sustainable solutions for water sector improvement, while supporting economic growth, environmental stewardship, and development of infrastructure.

Notable current examples of CDM's services, exemplifying the firm's leadership in creating and implementing "Cities of the Future" concepts for sustainable infrastructure and environmental improvement, include:

- Singapore's award-winning Marina Barrage, providing multiple benefits of urban flood control, water supply, and visual/recreational attraction
- Major environmental sanitation project and new water supply works in Ho Chi Minh City, Vietnam
- River basin management program and decision-support model for improved water quality serving greater Dublin, Ireland
- Program management for a massive new wastewater infrastructure and water reclamation system serving 1 million in capital city of Doha, Qatar
- Sustainable, multiple-benefit approaches to revitalization of USA urban centres including redevelopment of an urban river corridor in Fort Worth, a citywide integrated water resources management program for Los Angeles, and watershed-based water quality improvement in Philadelphia
- Concept development through program management for long-term system-wide dependability in water supply system serving 8 million people, New York City
- Sustainable infrastructure, greenhouse gas assessment, and distributed energy facility design for new science campus, Harvard University, Cambridge



## CH2MHILL

CH2M HILL is a full-service leader in water program and construction management, technical consulting, design and build (EPC), and operations. Our Water Business Group provides solutions for our municipal clients and the private sectors in mining, oil and gas, chemicals, energy, electronics, life sciences, manufacturing, and enterprise management. Our service is worldwide, using the latest technologies and innovative solutions to move projects from concept to successful operation.

We continue to be excited about our involvement as a founding sponsor of Singapore International Water Week, as in recent months we have been engaged by clients on projects highly relevant to SIWW. As well as program management on the world's first zero carbon footprint city in Abu Dhabi, which uses green desalination, CH2M HILL has been engaged as owner's engineer for the next desalination plant in Perth, Australia. And in the USA, CH2M HILL recently was selected by the U.S. Bureau of Reclamation to operate, maintain and manage the Yuma Desalting Plant, the largest reverse osmosis desalination plant in the United States. CH2M HILL OMI operates and maintains water and wastewater systems for clients throughout the U.S, and in Canada and Puerto Rico.

Our in-house water business expertise includes desalination and membrane technologies, water reuse and effluent management, water/wastewater treatment and conveyance, total water quality management, asset management, institutional strengthening, flood control, aquifer storage and recovery (ASR), privatisation and infrastructure management services, and operations.

## Dayen Environment



Dayen is an environment engineering company that provides comprehensive solutions for clean water. We are a single-source provider of engineering, field construction, project management and operations and maintenance services to municipal, industrial and commercial customers.

Dayen's Vision Statement: "To be the preferred provider of complete

environmental related solutions and services in region that benefits our customers, companies, communities, employee and shareholders"

The world's thirst for clean water and environment is ever so insatiable. Be it, clean water for consumption, recycled water for industrial use, or treated wastewater to be discharged safely back to our mother earth.

At Dayen, we are your partner for clean water.

Dayen understand and services the construction and maintenance needs of major industries including power and water utilities, municipal authorities, oil & gas, semiconductor & electronics and food & beverages.

For future project and work, Dayen would like to focus on 3 area of technology:

- 1) MBR Technology for wastewater recycling
- 2) Variable Salinity Desalination Technology
- 3) Oily Water Treatment Technology for Produced Water in Oil & Gas industry

For more information about Dayen, please visit [www.dayen.com.sg](http://www.dayen.com.sg)

### **Dow Water Solutions**



Dow Water Solutions is a comprehensive global provider of water treatment and specialty separation solutions based on a wide range of advanced technologies and services. Its products are used for a full spectrum of water and non-water treatment applications. Products from Dow Water Solutions help benefit the health of millions of people, improve the quality and performance of consumer and industrial products, and enable vital industrial processes.

Enabling components include reverse osmosis, nanofiltration, ultrafiltration, electrodeionization and ion exchange products.

### **Hyflux**



#### Zeolite Dewatering Membrane Technology Offers Energy Savings

On October 9, 2007, Hyflux Ltd (Hyflux), BP International Ltd (BP) and the Dalian Institute of Chemical Physics (DICP) announced plans to jointly develop and commercialise the use of zeolite dewatering membranes in the production of biofuel.

By increasing the efficiency of the dewatering step, zeolite membranes have the potential to significantly reduce the energy costs of production of biofuels such as bio-ethanol.

The three-party collaboration will draw upon DICP's strong technical knowledge in zeolite membrane technology, and Hyflux's commercial experience in membrane manufacturing, membrane module manufacturing, process design and systems integration, as well as BP's worldwide fuel technology expertise, market network,

and know-how.

According to market reports *Clean Energy Trends 2007* and *Biofuel Market Worldwide (2006)*, global investment in biofuels accounted for some US\$20 billion in 2006. By 2020, the estimated global demand of bio-ethanol is estimated to reach 120,000 million litres.

Commenting on this significant milestone in the field of clean energy, Hyflux Group CEO & President, Olivia Lum said, "This exploration into bio-ethanol processing dovetails with Hyflux's corporate philosophies of being eco-friendly and seeks to bring about commercialisation of a new membrane application."

"Hyflux and DICI are acknowledged leaders in their respective fields and we believe this partnership will strengthen innovation and continue to drive down the cost and energy requirement for biofuels purification," said Pek Hak Bin, Country President of BP Singapore.

Looking ahead, Hyflux is very optimistic about the potential spin-offs of the widespread applications of zeolite technology.



### **Keppel Corporation**

Keppel Corporation's environmental business is consolidated under the Keppel Integrated Engineering (KIE) group. A member of this group, Keppel Seghers, is a leading provider of comprehensive environmental solutions ranging from consultancy, design and engineering, technology and construction to operations and maintenance of facilities. Its advanced technology solutions address a wide spectrum of environmental issues such as solid waste, wastewater, drinking & process water, biosolids & sludge.

With more than 350 plants built worldwide, Keppel Seghers water/wastewater treatment expertise covers the full water cycle (including systems for wastewater treatment, process water, drinking water, desalination and water reuse).

In Singapore, the Keppel Seghers Ulu Pandan NEWater Plant was officially opened by Prime Minister Lee Hsien Loong on 15 March 2007. The plant, the largest water reuse plant in East Asia and the second largest in the world, has a capacity to produce 32 mgd (148,000m<sup>3</sup>/day) of NEWater to supply over half of Singapore's current NEWater needs. Keppel Seghers will own and operate this for 20 years.

Keppel Seghers was awarded an approximately S\$1.5 billion Design-Build-Operate contract by ASHGHAL, the Public Works Authority (PWA) in Qatar to design and build the largest greenfield wastewater treatment and reuse facility in Qatar and the Middle East, and subsequently operate and maintain this facility for 10 years. This will be the largest wastewater treatment and reuse facility in Qatar, treating wastewater of up to 439,000 m<sup>3</sup>/day.

KIE's has set up the Keppel Environmental Technology Centre (KETC) to provide innovative and cost-effective environmental solutions through research collaboration with renowned institutions such as NUS, NTU, Cranfield University and Netherlands Organisation for Applied Scientific Research. KETC will focus research efforts on energy recovery from solid waste and wastewater treatment, recycling and minimisation of residual by-products from waste and wastewater treatment, and membrane applications for producing water from non-conventional sources.



## Salcon Pte Ltd

Established in 1980, Salcon Pte Ltd is a leading international water and wastewater engineering specialist from Asia. Salcon is a wholly owned subsidiary of BOUSTEAD Singapore, which was established in 1828 and has been listed on the main board of the Singapore Stock Exchange since 1975.

SALCON has been ISO 9001 Quality Certified since 1994 and its workshop has the ASME "S" and "U" stamped Qualification. It is approved by the Building and Construction Authority of Singapore (BCA) to tender for Building C2, Civil B2, Electrical L5 and Grade Unlimited for Mechanical Works.

With nearly three decades of experience, we have designed and constructed more than 800 industrial and municipal water and wastewater treatment plants in 56 countries globally. Our global clients come from a variety of industries including oil & gas/petrochemicals, power, agro-industry, electronics, semiconductors, chemicals, steel, food & beverage, tourism and municipal authorities.

Salcon has the distinction of being the only Asian specialist outside of Japan to be a pre-qualified vendor to several of the world's largest EPC (Engineering, Procurement and Construction) firms including Bechtel, Foster Wheeler, Hitachi Plant Engineering, Hitachi Zosen, Hyundai Engineering, JGC, Lurgi, Mitsubishi Heavy Industries, Mitsui Engineering, Samsung Engineering and Simon-Curves.

Among Salcon's numerous milestones, we have designed and constructed eight seawater desalination plants across Asia including Singapore's first dual membrane technology seawater desalination plant located at Senoko Power Station. Salcon is also nearing the completion of the Phase II Extension for El Hadba Sewage Treatment Works in Libya, which will bring its capacity to 410,000 m<sup>3</sup>/day, making it the largest sewage treatment plant in the country.

Currently, Salcon is undertaking the Phase II Extension for Bedok NEWater Factory awarded by the Public Utilities Board. The Phase II Extension will increase production capacity by 55,000 m<sup>3</sup>/day, bringing total capacity of 87,000 m<sup>3</sup>/day and making the plant the largest NEWater facility owned and operated by PUB. The plant will also utilise the world's first commercial 16-inch reverse osmosis membranes, a technological feat in the global industry.

Visit <http://www.salcongroup.com>

## Sembcorp Industries



Sembcorp is a leading centralised utilities and energy provider, offering process industry MNCs a range of fully integrated industrial site services, including natural gas, power, steam, cooling water, high grade industrial water, wastewater



treatment and chemical waste incineration. Sembcorp pioneered this multi-utilities concept on Jurong Island in 1997 and now serves over 100 MNC customers out of its operations in Singapore, UK, and China.

Core to Sembcorp's utilities offering are competitive and technologically advanced water solutions. These capabilities have been successfully exported to key overseas markets. Today, Sembcorp owns and operates water treatment facilities in Singapore's Jurong Island, China, the UK and the United Arab Emirates (UAE).

Globally, Sembcorp manages over 3 million cubic metres per day of industrial water. Its industrial wastewater treatment facilities worldwide have an existing combined capacity of around 40,500 cubic metres per day, with a further capacity of over 50,000 cubic metres per day in development. Sembcorp's broad expertise in industrial wastewater treatment encompasses the ability to treat high concentration wastewater as well as high salinity wastewater. The company also has desalination capabilities of 100 million imperial gallons per day (450,000 cubic metres per day), within its combined water-and-power plant in Fujairah, UAE.

Besides wastewater treatment and desalination, Sembcorp's water services include providing various process waters to chemical and petrochemical clients, such as high grade industrial water, demineralised water, seawater, cooling water, raw water and fire-fighting water.

### **Siemens Water**

Siemens takes care of the world's water. Siemens Water Technologies is a water treatment equipment and service provider with 5500 employees at 170 locations worldwide. More than 200,000 technology and service installations around the world illustrate the company's product, process and service expertise.

By 2025, one third of the world's population will be affected by water shortages and by 2050, 60 percent. Siemens develops drinking water and wastewater technologies that help manage the world's water resources more effectively. In fact, Siemens' membrane technology treats more than 1.3 billion gallons of water per day for water reuse and reclamation, helping reduce the demand on potable water worldwide.

Siemens Water Technologies serves more than 90 percent of the Fortune 500 manufacturing companies, including approximately 100,000 industrial customers. Water is critical to every manufacturing process including cars, computers, oil and gas producers, and pharmaceuticals. Through high-purity technology and related services, Siemens helps industry and manufacturers meet specific water quality requirements to ensure consistent processes and production. Siemens also helps industry meet ever increasing wastewater regulations, while improving efficiency and reducing waste.

More than 2,100 water-related patents and trademarks illustrate the company's innovative spirit and passion for taking care of the world's water.

For more information visit us at [www.siemens.com/water](http://www.siemens.com/water) or e-mail at [information.water@siemens.com](mailto:information.water@siemens.com)



## **SUEZ Environment**

SUEZ Environment, a SUEZ business line, provides equipment and services that protect the environment and deliver the essentials of life. Its activities include drinking water production and distribution, wastewater collection and treatment, and waste treatment and recovery. Backed by its experience in the water and waste cycles industry, SUEZ Environment has a wide-ranging portfolio of know-how in providing a sustainable solution to the requirements of local authorities and businesses. SUEZ Environment employs 60,000 people worldwide and in 2006 generated revenues of €11.4 billion.



## **United Engineers Ltd**

United Engineers Limited is established in 1912, United Engineers Limited ('Group') is one of Singapore's pioneer companies. With a rich engineering heritage, the Group has played an integral role in the physical and economic transformation of Singapore.

Building on its early engineering roots, the Group core strengths today are in Engineering, Construction and Integrated Facility Management, forming end-to-end capabilities from Design, Build to Operate, particularly in property and environmental-related projects.

The Group's history is not complete without a mention of its flagship building, UE Square, a premier mixed development with an office tower, retail mall and serviced apartments off River Valley/Clemenceau Avenue. Due to the foundational role played by the Group in the early development of Singapore, the National Heritage Board has marked UE Square a historic site in 2002.

Today, the Group has about 5,000 employees across 12 countries in Asia. In 2007, it has also been recognised as the 11th oldest member of the Singapore International Chamber of Commerce.

Visit <http://www.uel.com.sg>



## **Veolia Water Solutions & Technologies**

"Veolia Water Solutions & Technologies (VWS) is a fully owned subsidiary of Veolia Water, the global leader in water services. VWS is the world leader in engineering, design, project management and execution of water treatment plants. The company also creates dedicated technological solutions and offers a whole range of associated services to guarantee the technical efficiency and life expectancy of the installations.

With more than 70 years of international experience in water treatment VWS combines expertise and innovation to offer technological excellence to its clients in more than 55 countries.

VWS consists of a network of more than 120 business units worldwide supported by international competence centers, experts and R&D centers. This unique combination of international capabilities and local setups enables VWS to better understand the needs of its customers and offer them state-of-the-art water treatment solutions.

Thanks to an unequalled portfolio of innovative technologies (200 owned

technologies & 1,000 patents), VWS offers solutions in drinking water, process water, water recycling and reuse, desalination, feed water for utilities, waste water and odor treatment.

Present in Singapore for over 20 years, VWS has actively supported the ambitious NEWater project since 1998. VWS has designed and built the Bedok pilot plant as well as the Kranji High Grade Water Reclamation Plant."

#### Founding Sponsors



#### Strategic Partners



#### Lee Kuan Yew Water Prize Sponsor



#### Supporting Organisations

##### International:



##### Local:

Agency for Science, Technology and Research, Economic Development Board, International Enterprise Singapore, Ministry of Foreign Affairs, Ministry of Information, Communications and the Arts, Ministry of Trade and Industry, National Environment Agency, Nanyang Technological University, National University of Singapore, Singapore Sports Council, Singapore Tourism Board, SPRING Singapore.

#### Support Media



#### Support Publication



**Organised by Singapore International Water Week Pte Ltd**

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The World Cities Summit will be taking place alongside the Singapore International Water Week 2008.  
For more information please visit [www.worldcities.com.sg](http://www.worldcities.com.sg)