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Singapore International Water Week Online Concludes Successfully

Despite COVID-19, SIWW saw high participation from international thought leaders, industry players and exhibitors - underscores Singapore's position as a global hydrohub

Singapore, 23 November 2020 – The Singapore International Water Week (SIWW) concluded SIWW Online, its first-ever virtual edition, with strong participation from 3,000 participants worldwide, spanning 90 countries/ regions.

2 The two-day event, held from 18 to 19 November 2020, featured 10 webinars with **over 70 renowned international and local speakers**, including an **Exhibitor Showcase** which unveiled cutting-edge products and solutions launched in Asia Pacific for the first time, as well as a **Virtual Expo** showcasing the latest water technologies and products.

Digital innovation and climate change take centre-stage at SIWW Online 2020

3 Digital transformation, innovation, and climate change adaptation and mitigation strategies were key themes for the webinar series¹, featuring participation from some of the leading water experts and industry leaders who shared insightful perspectives on topics from water and climate resilience, water financing, digital innovation to future trends in water treatment. Notable speakers included **Albert Cho**, VP and Chief Strategy and Digital Officer, Xylem, **Jennifer Sara**, Global Director for Water Global Practice, World Bank, **Ng Joo Hee**, Chief Executive of PUB, Singapore's National Water Agency, **Paul Bulcke**, Chairman of Nestlé, and **Taqsem A. Khan**, Managing Director and Chief Executive Officer of Dhaka Water Supply and Sewerage Authority.

¹ The recorded webinars will continue to be made available free-of-charge on the virtual platform for registered participants until 16 December 2020.

Book launch on PUB's digital transformation journey

4 The event also witnessed the launch of the first book under the Digital Water Book Series by International Water Association Publishing (IWA Publishing) – “***Digitalising Water: Sharing Singapore's Experience***” – that features PUB's digital transformation journey to become a smart utility. The Digital Water Book series aims to provide an overview of the digital trends driving utility transformation, as well as the impact of digitalisation on the water sector. PUB is the first utility to be featured for its continuous efforts to digitalise Singapore's entire water system to improve operational efficiency and meet the nation's future needs.

5 Prof Vladan Babovic, Editor-in-Chief for the Digital Water Book Series by IWA Publishing, and Professor at the National University of Singapore said, “Over the past decade, Singapore's National Water Agency PUB demonstrated remarkable thought leadership, substantiated by tangible incorporation of various digital initiatives in its daily operations. It is most fitting that their endeavours are featured in the first of the International Water Association Publishing's Digital Water Book Series. As digital transformation continues to reshape business domains, organisations will be under pressure to adapt to change to take full advantage of the opportunities ahead. By featuring efforts from various utilities around the world and effective digital strategies for water management, we hope this book series will provide a strategic direction for utilities to turn digital threats into opportunities and leverage digital technologies to enhance performance.”

6 To support business exchange and collaboration, SIWW Online presented a specially curated **Exhibitor Showcase** and **Virtual Expo** to facilitate matchmaking and networking, where close to 100 international exhibitors from 16 countries/ regions took up virtual booths for their product offerings. **Several companies seized the opportunity to launch their latest products and solutions for the first time in Asia Pacific**, with innovations designed to improve urban planning analysis, seawater treatment and operational efficiency of cooling systems. Interesting technologies unveiled include:

- a) **Draeger's Polytron 6100 Toxic Wireless Gas Detector**, a wireless transmitter for the continuous monitoring of toxic gases and oxygen to enhance workplace safety. The device features a completely wireless signal transmission and power supply, making it a cost-efficient solution for plant expansions, upgrades and new installations, without the need for cabling and installation.

- b) **Nalco Water's Non-Phosphorous Cooling Water Treatment Program**, a new scale and corrosion control program that improves the operational efficiency of cooling systems while reducing operational costs. Existing non-phosphorus programs for cooling water treatment often result in mild steel corrosion, with a limited operational window and high treatment cost. The novel program allows cooling systems to operate in higher cycles without compromising performance, resulting in water and energy savings and longer asset life.
- c) **SUEZ's Sewerball**, a robust drift float with miniaturised quality sensors onboard to detect inflows and infiltrations in the sewer networks. The easy-to-deploy device is able to pinpoint the origin of problems over large distances, thus reducing the need for more costly or hazardous operations such as CCTVs or manned entry inspections.
- d) **Viscoy's FLYABILITY ELIOS 2** is the world's first collision-resilience drone, designed for GPS-denied environments, such as mines or inside industrial boilers. To counter the navigation challenges and risk of collision without positioning data, the drone uses vision stability sensors to stabilise itself, while its powerful lighting and 4K resolution camera is able to capture footages in the darkest environments.

7 “Despite the COVID-19 pandemic and international travel restrictions, Singapore International Water Week remains a leading global water platform that is constantly innovating and thinking ahead to bring greater value to our stakeholders. With the strong continued support from all our partners, sponsors and exhibitors, we leveraged on digital capabilities and introduced the inaugural SIWW Online in recognition of the need to press ahead with knowledge exchange, peer-to-peer learning and business interaction on significant water issues during this challenging time. We are therefore delighted and thankful for the strong show of support with 3,000 participants from 90 countries/ regions joining us over the two days. We look forward to seeing everyone in Singapore at Singapore International Water Week 2021 next June,” said Mr Ryan Yuen, Managing Director, SIWW.

8 “The SIWW Online came at an opportune time to connect the international water community when the pace of digitalisation across all sectors has been accelerated by COVID-19. We are glad to participate in this two-day event, packed with thoughtfully curated webinars on the pertinent topics in the water industry and the latest innovations. We benefitted from

the depth of discussions and were glad for the virtual networking opportunities to expand our reach and generate new business opportunities,” said Kwak Soon Chul, Managing Director, Toray Asia Pte Ltd.

9 The next edition, Singapore International Water Week 2021, will be held from 20 to 24 June 2021. For more information, please visit www.siww.com.sg.

Annex A – SIWW Online Programme and Speakers

Annex B – SIWW Exhibitor Showcase

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About PUB, Singapore’s National Water Agency

PUB is a statutory board under the Ministry of Sustainability and the Environment. It is the national water agency, and manages Singapore’s water supply, water catchment and used water in an integrated way.

PUB has ensured a diversified and sustainable supply of water for Singapore with the Four National Taps (local catchment water, imported water, NEWater, desalinated water).

PUB calls on everyone to play a part in conserving water, in keeping our waterways clean, and in caring for Singapore’s precious water resources. If we all do our little bit, there will be enough water for all our needs – for commerce and industry, for living, for life.

Find out more about us:

Like us at www.facebook.com/PUBsg

Follow us on www.instagram.com/PUBsingapore and www.twitter.com/PUBsingapore

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About Singapore International Water Week

The Singapore International Water Week (SIWW) is the global platform to share and co-create innovative water solutions. The biennial event gathers thought leaders and stakeholders from the global water industry and to share best practices and solutions, showcase the latest technologies and tap business opportunities. SIWW is part of the strategic programme of the Singapore Government to grow the water industry and develop water technologies.

For more updates on SIWW, visit www.siww.com.sg or follow SIWW on social media:

LinkedIn: <https://sg.linkedin.com/in/siwwlinkedin>

Facebook: <https://www.facebook.com/siww.com.sg/>

Twitter: <https://twitter.com/waterweeksg?lang=en>

YouTube: https://www.youtube.com/playlist?list=PL5ythKCFStHWkYa9OPO-oLzqt7u_iNXsZ

Annex A – SIWW Online Programme and Speakers

A total of 10 webinars were organised during SIWW Online. With a focus on thematic areas of interest to water utilities, most of these webinars were jointly organised with SIWW Strategic Partners, SIWW Founding Sponsors, and SIWW Supporting Organisations.

18 November 2020, Wednesday

Webinar	Synopsis	Speakers & Panelists
<p>Re-imagining Water Utilities in a Digital World</p> <p><i>(Co-organised with Xylem and Jacobs)</i></p>	<p>COVID-19 has accelerated the adoption of digital transformation globally. How can water utilities transform? Get a glimpse into how water utilities can leverage digital technologies across the water cycle and delivery chain to achieve energy optimisation, operational efficiency and cost certainty.</p> <p>Witness also the launch of the “Digitalising Water – Sharing Singapore’s Experience” publication by PUB, Singapore’s National Water Agency and International Water Association in this webinar.</p>	<ul style="list-style-type: none"> • Prof Vladan Babovic, Professor, National University of Singapore • Harry Seah, Deputy Chief Executive (Operations), PUB, Singapore’s National Water Agency • Raja Kadiyala, Vice President and Senior Technology Fellow, Global Digital Director, Jacobs • Albert Cho, Vice President and Chief Strategy and Digital Officer, Xylem • Barbara Wilson, Information Services Officer, Denver Metro Wastewater Reclamation District • Dr Ting Lu, Business Practice Leader – Digital Solutions, Clean Water Services • Junwei Jin, Deputy Director, Shenzhen Water Group • (Moderator) Vinod Singh, Director (Asia and India), Jacobs
<p>Water Reuse – Future Trends and Applications</p>	<p>This webinar introduces recent developments in water reuse strategies and technologies, and discusses viable alternatives to Reverse Osmosis (RO)-based potable reuse technologies. Several water reuse case studies from around the world will be presented, including Singapore’s approach to water reuse through its NEWater initiative.</p> <p>This webinar is a preview of the Singapore Water Management (SgWM) Series on Water Reuse in June 2021.</p>	<ul style="list-style-type: none"> • Prof Ian Law, Chief Executive, IBL Solutions and Adjunct Professor, University of Queensland • (Moderator) Winson Lay, General Manager, Jurong Water Reclamation Plant, PUB, Singapore’s National Water Agency
<p>Exhibitor Showcase – Bringing you the Latest Solutions on Display</p>	<p>This exhibitor showcase will feature the latest products and innovations brought to you by our participating exhibitors at SIWW Online. Solutions that are presented at this showcase will be exhibited for the first time in Asia- Pacific in 2020!</p>	

<p>Ceramic Membranes – The Future of Water Treatment Technology</p> <p><i>(Co-organised with PWNT and Nanostone)</i></p>	<p>Ceramic membrane-based water treatment technologies have gained traction in recent years due its high performance- with a longer lifespan, ability to resist fouling, capability to treat water of variable quality, and more.</p> <p>Hear from industry and utility experts and learn about successful case studies on the applications of ceramic membrane technology in municipal and industrial water treatment and how they represent the future of water purification technology.</p>	<ul style="list-style-type: none"> Jonathan Clement, Chief Technology Officer, Nanostone Water Graeme Pearce, Principal, Membrane Consultancy Associates Gilbert Galjaard, Chief Process Engineer, Nanostone Water Carlo Patteri, Business Leader Industrial Water, Nanostone Water Jacob Fonteijne, Chief Operating Officer, PWNT Dr Bram Martijn, Head of R&D, PWNT Puah Aik Num, Chief Specialist (Water Treatment), Technology Department, PUB, Singapore’s National Water Agency Chris Rockey, Head of Drinking Water Quality, South West Water Dr Holly Shorney-Darby, Senior Project Manager, PWNT
<p>Building Water Resilience: Adaptation and Mitigation in the Age of Climate Change</p>	<p>In today’s changing climate, ensuring water security is critical as the global demand for clean water increases. Compounded by the current pandemic, are cities, utilities and industries allocating sufficient resources to address the impact of climate change on water systems?</p> <p>Gain insights on climate-related risks on urban water infrastructure and financing investments in light of climate uncertainties.</p> <p>This webinar will also celebrate the launch of the Festschrift in honour of Prof Asit K. Biswas.</p>	<ul style="list-style-type: none"> Peter Joo Hee Ng, Chief Executive, PUB, Singapore’s National Water Agency Paul Bulcke, Chairman of the Board of Directors, Nestlé S.A Prof Asit Biswas, Distinguished Visiting Professor, University of Glasgow, UK, and Director, Water Management International Pte Ltd, Singapore Prof Claudia Pahl-Wostl, Professor for Resources Management, University of Osnabrück, Germany (Moderator) Dr Cecilia Tortajada, Senior Research Fellow, Institute of Water Policy, Singapore and Professor-designate, University of Glasgow, UK

19 November 2020, Thursday

Webinar	Synopsis	Speakers & Panelists
<p>Innovative Financing with Multilateral Development Banks</p> <p><i>(Co-organised with Asian Development Bank and World Bank)</i></p>	<p>Globally, the infrastructure gap is forecast to reach \$15 trillion by 2040, with much of this investment required in developing Asia. Effects of climate change and the COVID-19 has exacerbated the need for governments to pursue sustainable, climate-adjusted approaches for long-term economic growth.</p> <p>Learn about innovative financing instruments and case</p>	<ul style="list-style-type: none"> Sudipto Sarkar, Practice Manager (East Asia), Water Global Practice, World Bank Group Tom Panella, Chief of Water Sector Group, Asian Development Bank Jennifer Sara, Global Director, Water Global Practice, World Bank Group Seth Tan, Executive Director, Infrastructure Asia Hisaka Kimura, Head of ADB Infrastructure Finance in East Asia, Advisor to Private Sector Operations Department, Asian Development Bank Taqsem A. Khan, Managing Director and Chief Executive Officer, Dhaka Water Supply and Sewerage Authority

	<p>studies on successful applications of innovative financing in water infrastructure investments.</p>	<ul style="list-style-type: none"> • Perry Rivera, Chief Operating Officer, Manila Water Company • (Moderator) Sharad Somani, Partner & Head of Infrastructure, Asia-Pacific, KPMG
<p>Game-Changers in Water Innovation</p> <p><i>(Co-organised with Imagine H2O)</i></p>	<p>The water sector continues to face increasing pressures, with existing systems being stressed and the need to increase the sector's resilience and sustainability.</p> <p>Hear from successful technopreneurs and witness game-changing technologies in water reuse, water-energy nexus, network management, flood control and more. Understand how the diverse range of solutions can help you achieve more secure, resilient and sustainable water and wastewater systems.</p>	<ul style="list-style-type: none"> • Nimesh Modak, Director, Imagine H2O Asia • Patrick Kiely, Chief Executive Officer, SENTRY • David Sarphe, Chief Executive Officer, AquAffirm • Leela Krishna, Co-founder and Chief Business Officer, SpaceAge Labs • Antony Prince, Founder & Chief Executive Officer, Memsift • Gokul Krishna Govindu, Founder, SmartTerra • John Tracy, Vice-President of Sales & Marketing, Fluid Technology Solutions • Asim Bhalerao, Founder and Nidhi Jain, Co-founder, Fluid Robotics • Prateep Basu, Co-founder & Chief Executive Officer, SatSure • Bashir Ahmad, Chief Executive Officer, Liquinex • Ivan Tang, Co-founder & Chief Technology Officer, Mempure • Jun Ho Oh, Marketing Manager, Arun
<p>Enhancing Water Resilience through Innovation in the Philippines</p> <p><i>(Co-organised with FutureWater Asia and Philippine Association of Water Districts)</i></p>	<p>The Philippines water sector continues to face significant challenges, such as ageing water infrastructure, unsafe water sources, poor sanitation coverage – yet at the same time, opportunities are abound. Despite its growing economy, many still lack access to improved water sources and sanitation.</p> <p>Learn about the Philippines' innovative projects and solutions adopted by progressive water districts to increase water resiliency, efficiency and efficacy.</p>	<ul style="list-style-type: none"> • Stella Gonzales, President, Philippine Association of Water Districts • Alexia Michels, Country Director, Eau et Vie • Ronald Padua, Vice President and Head of Water Supply Operations, Maynilad Water Services Inc. • Eloisa Ramos, Corporate Planning Department, Baliwag Water District • (Moderator) Ramon Alikpala, Chief Executive Officer, FutureWater Asia
<p>Advancing Innovations through Partnerships: The Singapore Experience</p> <p><i>(Co-organised)</i></p>	<p>Singapore has turned its water scarcity from a vulnerability to a strength. However, challenges such as rising water demand, increasing energy and sludge footprints remain.</p> <p>Get perspectives on Singapore's innovation landscape and how one of its initiatives, the Singapore Water</p>	<ul style="list-style-type: none"> • Chew Men Leong, President, Singapore Water Association, and Chief Marketing Officer, ST Engineering Marine • Michael Toh, Director, Industry & Technology Collaboration Department, PUB, Singapore's National Water Agency • Chiu Kuang Ping, Council Member, Singapore Water Association, and Executive Director, AECOM Singapore • Scott Bryan, President, ImagineH2O

<p><i>with Singapore Water Association)</i></p>	<p>Exchange (SgWX) – an ecosystem of water companies in the value chain connects stakeholders, facilitate collaborations and co-create solutions.</p>	<ul style="list-style-type: none"> • Eric Stacey, Vice President and General Manager of Echologics, Mueller Water Products • Leela Krishna, Co-founder and Chief Business Officer, SpaceAge Labs • Foo Say Tun, Chief Executive Officer, ZWEEC Analytics • (Moderator) Piers Clark, Chairman, Isle Utilities
<p>Industrial Water Solutions: Reducing Industry Water Footprint Through Innovation and Corporate Stewardship <i>(Co-organised with SUEZ)</i></p>	<p>Today, corporations face pressure from the government and the public to reduce water consumption and meet stringent requirements for discharge of trade effluent. Against a backdrop of scarce resources and climate change, how can businesses optimise and secure water resources required?</p> <p>Listen to experts from different industries on the best practices to reduce risks and reliance on water, through water stewardship and innovative technologies.</p>	<ul style="list-style-type: none"> • Gabriel Gabor Kicsi, Singapore Water Technology Centre Director, SUEZ Water Technologies & Solutions • Pang Chee Meng, Chief Engineering & Technology Officer, PUB, Singapore’s National Water Agency • Liew Yien Phin, Senior Vice President, Head of Water (Singapore & SEA), Sembcorp • Aaric Poo, Assistant Plant Manager, F&N • Chris Ng, Director, Singapore Pioneer Plant Manager, Procter & Gamble • Sally Johnston, Senior Process Engineer and Water Subject Matter Expert, BHP Billiton • (Moderator) Mahesh Rao, Director, Strategic Marketing & Key Accounts (Asia-Pacific), SUEZ Water Technologies & Solutions

Annex B – SIWW Online Exhibitor Showcase

The Exhibitor Showcase was held on Wednesday 18 November 2020. Products and solutions presented at the Exhibitor Showcase were exhibited in Asia-Pacific for the first time.

Company	Product	Product Description
Arcadis Singapore Pte Ltd	BaRT – Bankability Resilience tool	Optioneering using the Bankable Resilience Tool (BaRT), a profound cost-benefit analysis tool, supports cities, developers and investors to identify value engineered resilience options in multi stakeholder urban planning. It shows costs, benefits and ecosystem’s values of resilience measures, while allocating these to stakeholders. BaRT prepares opportunities to capture value and to outline possible financial arrangements.
Jacobi Carbons AG Singapore Branch	Microgranular Activated Carbon	Microgranular activated carbon is a new generation of activated carbon, intended for use in fluidisation processes, for the drinking water treatment. The grain size distribution of this activated carbon is strictly calibrated and controlled in order to allow its expansion at the desired fluidisation velocity and its rapid sedimentation without any coagulant. It also gives excellent adsorption kinetics.
Draeger Singapore Pte Ltd	Polytron 6100 – Toxic Wireless Gas Detector	Draeger Polytron 6100, the true wireless toxic gas detector, designed to mitigate challenges with wide range of toxic gas sensors deployment to enhance plant safety; leading to cost savings with lower CAPEX & OPEX as it reduces or cut back the need of standard cabling and extensive engineering installation work.
DuPont Water Solutions	1. FilmTec™ Dry Seawater RO (SWRO) 2. FilmTec™ Fouling Resistant Sea Water RO membrane (SW30XFR-400/34)	Dry Seawater Reverse Osmosis Elements - a step-change innovation The new dry SWRO product portfolio is a breakthrough for the water treatment industry. Continuous advances in membrane chemistry, testing methods and procedures, together with automated precision single source manufacturing, enables DuPont to be the only supplier to offer dry SWRO elements.
Bright Sheland International Co., Ltd	Filtration products & UV Disinfection systems	The Filtrafine FUV Series features a compact design that incorporates a UV treatment chamber with an electrical cabinet base that contains all electrical components and instrumentation. These compact and one-piece UV models are engineered for indoor installation and controlled operating environments. Markets: Food & Beverage, Life Sciences, Microelectronics, and General Industrial Applications
Horiba Instruments Singapore Pte Ltd	Water Distribution Monitor: TW-150	TW-150 is an online water distribution monitor which is dedicated for drinking water applications. The analyser can measure up to 7 parameters: Turbidity, Color, Residual Chlorine, Temperature, pH, and Pressure, with no reagents during operations. TW-150 allows continuous monitoring to determine if distributed water quality meets their requirements.
IFM Electronic Pte Ltd	1. The MVQ valve sensor directly connected to control valve with IO-Link	What if your production equipment self-detected and alerted you of quality defects? Core equipment such as the pump can be located in areas that are not easy to access and therefore not always easy to do frequent maintenance checks. IFM has a solution to help keep unmanned equipment monitored at all times.

	2. VVB vibration sensor: Real-time vibration monitoring with IO-Link	
Nalco Water, An Ecolab Company	Non-Phosphorous Cooling Water Treatment Program	Nalco Water's Non-Phosphorus Cooling Water Treatment Program - a new scale and corrosion control program that helps improve operational efficiency of cooling systems while reducing operational costs and protecting the environment. Its wide application window allows cooling systems to operate in higher cycles without compromising performance, resulting in water and energy savings and longer asset life.
SUEZ	Sewerball: A new way to detect Inflows and Infiltrations (I&I)	SewerBall is a drift float with miniaturised quality sensors onboard able to detect inflows and infiltrations in the sewer networks. Robust and easy to deploy, SewerBall pinpoints the origin of problems over large distances, reducing the need for more costly or hazardous operations such as CCTV or manned entry inspections.
UNEX APARELLAJE ELECTRICO S.L.	Non-metallic thermoplastic Cable Ladder	Unex Insulating cable ladder 67 is manufactured in specific thermoplastic raw material, a breakthrough product which provides safety and durability to the installations. Our corrosion-resistant cable ladder is a long-term, zero-maintenance solution suitable for outdoors and with exposure to UV rays, being a unique solution for hostile environments.
VEGA Instruments (SEA) Pte Ltd	VEGA Level & Pressure transmitters and Switches	VEGA has set itself the goal of developing innovative measurement technology that is easy to install and operate and offers maximum safety and reliability. VEGA has extended its radar sensor portfolio with a new instrument series. These new sensors are suitable for more price-sensitive applications, for example in the water / wastewater industry. Ultrasonic was yesterday – the future is radar!
Viscoy Pte Ltd	FLYABILITY ELIOS 2	The ELIOS 2 indoor drone, manufactured by Flyability SA, is the world's first collision-resilient drone. Designed for GPS-denied environments, it utilises integrated sensors to stabilise itself during flights. With its' powerful 10k lumens lighting, 180° tilt-able and 4K resolution camera, the ELIOS 2 captures footages superbly in the darkest environments.