



CONNECTIONS

November / December 2017

Connecting People and Ideas to Water Solutions

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New Year, New Ideas



In October, IDA convened its World Congress in São Paulo, Brazil. The first World Congress to be held in Latin America, this event also ushered in a change of leadership with not only a new President, Vice Presidents and slate of other officers – the norm every two years – but for the first time in IDA’s history, a new Secretary General.

With new leadership comes new ideas aimed at taking IDA into the future as a stronger organization with a broader scope as we enter a new year. These topics are covered in the Message from the President and the Message from the Secretary General in this issue.

The World Congress itself is the subject of a special section in this issue. For those of you who attended, we hope this

coverage brings warm memories, and for those who were unable to join us, we hope it paints a picture of an exciting event that has opened the door to many new relationships and to collaborations with new stakeholders.

This issue also reports on new developments regarding water reuse. IDA is now organizing its second Biennial International Water Reuse and Recycling Conference, focusing on the importance of water reuse around the world. We also include a report on the drivers for water reuse based on a study conducted by Water. desalination + reuse, IDA’s official member magazine.

We also report on a visit to the Maria da Paz community project in northeast Brazil, one of 500 Agua Doce program’s installed projects. Maria da Paz is an example of

■ signifies the end of an article.

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MESSAGE from the President



Miguel Angel Sanz
President

For more than four decades, the International Desalination Association has been the leading voice for the world's desalination industry, serving as the global hub of news and information for our community, advocating for the responsible use of desalination and desalination technologies in a variety of applications, promoting technology advancements, and providing invaluable avenues for knowledge sharing and information exchange.

We have recently incorporated water reuse as part of IDA's mission as we work together to help the world take advantage of complementary and sustainable solutions that will ensure the availability of water for future generations. We have also recently signed an MOU with the Global Solar Council to collaborate on reducing CO₂ emissions and lowering the cost of advanced water treatment solutions using renewable energies.

This development is in addition to our commitment with the Global Clean Water Desalination Alliance targets from 2015.

It is my great honor to serve as IDA's President for the next two years, alongside Mr. Rachid Ghamraoui, IDA's 1st Vice President; Mr. Li Youqing, 2nd Vice President; Ms. Shannon McCarthy, Secretary General; and our esteemed roster of officers and Board of Directors – all highly respected members of the world's desalination and water reuse community.

In many ways, the start of our term is a time to set the agenda for IDA's "next chapter". While we will build on our considerable strengths, we also seek to grow our organization with a dedicated effort that expands our connections to include global stakeholders from all aspects of our industry such as financial institutions, advocacy and policy-making organizations – that have not been part of our traditional membership base.

IDA is a community, and our future is also contingent upon our relevance to those we serve. It is not enough to offer events and information; we need to develop avenues that facilitate business- and career-building opportunities. We are also dedicated to creating deeper ties with our affiliates, expanding our strategic alliances and establishing new avenues for our collective growth and technology advancements.

We are confident that you will soon see the benefits of these efforts. For example, the creation of the IDA Sustainable Water Resources Foundation as a 501 (c) (3) organization is well underway, and with it, the prospect of broadening our reach into new areas to address

global water challenges while strengthening our knowledge sharing, educational and scientific support programs.

As a member, IDA is your association, and we will work diligently to improve our engagement with each of you. And while IDA has a professionally managed secretariat, involvement of our members in voluntary capacities such as participation in committees, initiatives like our Young Leaders Program (YLP), and development of technical programs for our industry-leading events has been crucial to fulfilling our mission. I have personally invited the leaders from our YLP to attend the IDA Board of Director meetings, and I encourage you to take an active part in IDA. You will not regret it.

As we work to enhance our communications, we invite your input about how IDA can be more meaningful to your business, your interests and your professional growth. It is your association, and you play a meaningful role in shaping its future.

My door is always open to hear your suggestions. Please do not hesitate to contact me at masanz@idadesal.org. Our leadership is here to serve you and the industry that we are all proud to be part of.

Sincerely,
Miguel Angel Sanz

The Role of Engagement in Tapping the Full Potential of IDA



By Shannon McCarthy

We often hear the term “engagement” these days, whether we’re talking about interactions on social media, involvement of company employees, or enhancing relationships with customers and other stakeholders.

What exactly is engagement and how does it pertain to IDA?

I believe that engagement is about establishing relationships and forming a community where people not only share interests, but also interact to create a more fulfilling and valued experience.

IDA is moving forward with a renewed sense of commitment to connect, engage with and provide value to the community we serve. Career and professional development services, business networking opportunities that forge effective relationships, and special platforms and channels for real-time communications among members are some of the most valuable things that a business and professional association can offer its members. Another is providing a knowledge and information source regarding business opportunities, R&D activities, industry developments and events, and professional education, which can benefit our individual members, industry members, and academic members.

While IDA is a professionally managed organization, our strength comes from the tireless and generous efforts of our members who spend their time on IDA matters because they believe in our mission to promote the development and use of desalination and water reuse around the world. These people, all of whom serve on a volunteer basis, are IDA’s most important resource.

We are committed to building an expanded IDA community that embraces all aspects of planning and satisfying global water needs, and promoting communication within that expanded community. Our vision is an IDA community that includes not only technology providers, but also government policy-makers, technology users, the

international finance community, global think tanks, and NGOs. A first step in this direction was made at the World Congress in São Paulo where panels were organized with institutions such as the World Bank, UNESCO, FAO – the Food & Agriculture Organization of the United Nations, Inter-American Development Bank and IHE Delft Institute for Water Education.

Likewise, IDA is dedicated to promoting the maximum practical use of non-polluting renewable energy sources to power desalination plants and water processing for reuse. IDA is expanding our strategic relationships and forming alliances to aid in achieving this objective.

I am honored to serve IDA in creating new opportunities for engagement with current and future members, affiliates and others involved in desalination and reuse – in turn, enabling them to closely engage with other members of the IDA community. The aim is to create more value, share knowledge and connect people and ideas to create water solutions. We are here to serve our members. IDA looks forward to embracing these opportunities as we chart our course as an invigorated, even more, relevant organization.

Shannon McCarthy is Secretary General of IDA. She can be reached at smccarthy@idadesal.org. ■



IDA leadership with utility executives from around the world.

Why Even the Most Mundane Wastewater Components Are Essential for a Circular Economy

by **Stefan Uhlenbrook, Richard Connor, Engin Koncagul and Angela Ortigara**

Over 80% of the world's wastewater – well over 95% in several developing countries – is released directly to the environment without prior treatment, with devastating impacts on human health and the environment. As the demand for water grows to meet the changing consumption patterns of increasing populations, so does the quantity of wastewater that we generate.

Wastewater has all too often been perceived as a burden to be disposed of, or a nuisance to be ignored. Large centralized wastewater management and sanitation systems require a large degree of up-front capital expenditure and relatively high operation and maintenance costs, and as such are not a financially feasible option for many developing countries.

Improved wastewater management need not necessarily be an expensive endeavor. Low-cost decentralized wastewater treatment systems that service individual or small groups of properties have been gaining interest worldwide. When appropriately designed and managed, such low-cost technologies provide satisfactory results in terms of effluent quality and improved health and living conditions.

It has been estimated that the investment requirements for these systems represent less than half of those of conventional treatment plants, with even lower operation and maintenance costs. But the economic arguments don't end there.

The recovery of water, nutrients and energy from low-cost wastewater treatment systems can provide additional revenue that further enhances the economic sustainability of these systems. Adequately treated wastewater can be safely used for irrigation, energy generation (e.g., cooling) and other activities. The nitrogen and phosphorus contained in domestic wastewater can be extracted to produce fertilizer, and

sewage sludge is a sustainable, energy-rich material that can be transformed into biogas.

Such an approach directly supports the transition to a circular economy, whereby economic development is balanced with the protection of natural resources and environmental sustainability. For example, phosphorus recovery from wastewater has become an increasingly viable alternative to scarce and depleting mineral phosphorus reserves. Recycling human urine and faeces ('pee' and 'poo') worldwide could satisfy an estimated 22% of global demand for phosphorus.

While 2.1 billion people gained access to improved sanitation facilities since 1990, 2.4 billion still do not have access to improved sanitation, and nearly 900 million people worldwide still practice open defecation due to lack of feasible alternatives.

Meeting the global sanitation and wastewater management challenges may appear daunting, especially in the context of the rapid population growth occurring in cities throughout the developing world. But the 2017 edition of the United Nations World Water Development Report demonstrates that meeting the Sustainable Development Goal for water and sanitation is technically and financially feasible. Embracing used water as a resource rather than a 'waste' is an essential step towards making this happen.

As the report concludes, "in a world where demands for freshwater are ever growing, and where limited water resources are increasingly stressed by over-abstraction, pollution and climate change, neglecting the opportunities arising from improved wastewater management is nothing less than unthinkable".

IDA thanks authors Stefan Uhlenbrook (Coordinator and Director), Richard Connor (Editor in Chief), Engin Koncagul (Process Coordinator) and Angela Ortigara (Programme Officer), United Nations World Water Assessment Programme (WWAP), UNESCO, Perugia, Italy, for contributing this article. Mr. Uhlenbrook can be reached at s.uhlenbrook@unesco.org.

IDA thanks President Dr. Emilio Gabrielli and all Term 17 Board members for their tireless service.



IDA welcomes President Miguel Angel Sanz and all Term 18 Board Members.



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1st Vice President

Mr. Rachid Ghamraoui

2nd Vice President

Mr. Youqing Li

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Ms. Shannon McCarthy

Comptroller

Mr. Emilio Gabrielli

Parliamentarian

Mr. Alistair Munro

Dean of the IDA Academy

Mr. Leon Awerbuch

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IDA Board of Directors

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**Indicates Officers*

Europe

Mr. Jose Diaz-Caneja
Mr. Carlos Cosin
Mr. Domingo Zarzo Martinez
Mr. Alistair Munro*
Mr. Miguel Angel Sanz*

Latin America/ Caribbean

Mr. Alejandro Sturniolo

North America

Mr. Leon Awerbuch*
Mr. Juan Miguel Pinto
Mr. Devesh Sharma
Dr. Richard Stover

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Mr. Rachid Ghamraoui*
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Mr. Mohamad Jaroudi
Mr. Fady Juez
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Mr. Maurice Neo
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Mr. Li Youqing*

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Asia Pacific Desalination Association (APDA)

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ASOCIACIÓN ESPAÑOLA DE
DESALACIÓN Y REUTILIZACIÓN

Mr. Antonio Casanas



ALADYR
ASOCIACIÓN LATINOAMERICANA DE
DESALACIÓN Y REUSO DE AGUA

Mr. Juan Miguel Pinto



AMTA
American Membrane Technology Association

Mr. Greg Wetterau



AWA
australian water association

Dr. Mike Dixon*



CaribDA
Caribbean Desalination Association

Mr. Shawn Meyer-Steele



European Desalination Society (EDS)

Mr. Borja Blanco



WATER DESALINATION ASSOCIATION
EST. 1996

Dr. P.K. Tewari



Japan Desalination Association (JDA)

Mr. Yoshinari Fusaoka



KDPA
Korea Desalination Plant Association

Dr. In. S. Kim



Levant Desalination Association

Mr. Ziad Salibi



PAKISTAN DESALINATION ASSOCIATION
PDPA
EST. 1994

Eng. Fayyaz Muddassir Mubeen



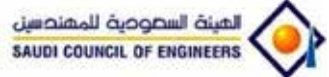
SWA
SINGAPORE WATER ASSOCIATION

Mr. Tan Ngo Chiaw



The Membrane Industry Association of China (MIAC)

Dr. Guoling Ruan



الهيئة السعودية للمهندسين
SAUDI COUNCIL OF ENGINEERS

Mr. Mohammad Hamad Alshahrani

Water Desalination Engineering Chapter (WDEC)



جمعية علوم وتقنية المياه
Water Sciences and Technology Association

Mr. Ali Redha Hussain

IDA Lifetime Achievement Award Presented to Dr. Adil Bushnak



IDA has presented its Lifetime Achievement Award to Dr. Adil Bushnak of the Kingdom of Saudi Arabia.

The IDA Lifetime Achievement Award is one of IDA's highest honors. It is presented to those individuals who have dedicated their lives to desalination and water reuse, sharing their deep knowledge and exemplary leadership with our industry.

Dr. Bushnak is the CEO of Bushnak Group, a leading investment group in desalination and water reuse. He holds BS and MS degrees from University of California (Berkeley) and a PhD from the University of Michigan (Ann Arbor). Dr. Bushnak started his career in 1972 as a lecturer at the College of Engineering of King Saud University. With his brothers Zuhdi and Faisal, he co-founded several technology and engineering companies, most of them in water-related activities.

Dr. Bushnak has over 35 years of experience in education, applied research, consulting, entrepreneurship and public service. He has been appointed by the Saudi government to several top policy councils on both the national and regional levels. He co-founded several national initiatives, philanthropic foundations and NGOs. He has active interests and investments in education and technology of water, saline agriculture and renewable energy.

Bushnak Group is a co-founder of several technology and investment companies in Saudi Arabia, Singapore, Indonesia, Bahrain, Bosnia, India and Yemen.

Dr. Bushnak was an active participant in establishing IDA. He repeatedly served on IDA's Board of Directors and was President of IDA from 1987-89.

Previous IDA Lifetime Achievement Award winners are Dr. James Birkett (2013 and 2003), Dr. Masaru Kurihara (2011), Dr. Miriam Balaban and Dr. Totaro Goto (2009) and Leon Awerbuch (2007). ■

IDA Announces Technical Program Award Winners

IDA conferred a number of awards related to the Technical Program at the 2017 IDA World Congress in São Paulo, Brazil.



► Presentation Awards

Awards for the best oral and written papers presented as part of the Technical Program were conferred in five categories. Winners were selected by members of the World Congress Awards Committee, using a weighted percentage score that is applied to criteria for each award. The World Congress Awards Committee was chaired by Borja Blanca. Members were Dr. Mike Dixon, Belen Gutierrez, Jr. Jochen Kallenberg, Dr. In S. Kim, Shawn Meyer-Steele, Manuel Manjon, Alistair Munro, Noemi Sanchez, Rodrigo Segovia and Greg Wetterau.

State-of-the-Art, for the best paper that presents the application of an established desalination or water reuse technology in a way that reflects the best engineering practices in all aspects of the project or topic presented.

Winner:

Sahil R. Shah, M.Sc, Graduate Student, Global Engineering and Research Lab, Massachusetts Institute of Technology, USA, for "Optimal Design of a Batch Electrodialysis System for Domestic Desalination."

IDA World Congress Highlights

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Innovation, for the best paper that presents an innovative desalination or water reuse technology that has reached the commercial stage but is not yet considered to be widely adopted.

Winner:

Sergio Salinas-Rodríguez, M.Sc, Ph.D., Senior Lecturer, IHE Delft Institute for Water Education, Environmental Engineering and Water Technology Department, The Netherlands, for "A New Method of Assessing Bacterial Growth in SWRO Systems: Method Development and Applications."

Research and Development, for the best paper that presents fundamental or applied research of a technology or concept related to desalination or water reuse that is at a pre-commercialization stage, but shows interesting signs of development that could lead to game-changing discoveries or technologies once at maturity.

Winner:

Raphael Rodrigues, Ph.D., Assistant Professor, Polytechnic School of Engineering, University of São Paulo, Brazil, for "Direct Potable Reuse in Brazil - A Pilot Plant Study."

Environment and Sustainability, for the best paper that presents a desalination or water reuse research topic, case study, technology or any project in such a way that it demonstrates how desalination can be applied while respecting the environment and applying the best sustainability principles.

Winner:

Sylvain Donnaz, B.S, Strategic Development Engineer, Suez International Treatment Infrastructure, France, for "Sustainable Infrastructure for Water Reuse in Agriculture: The As Samra WWTP in Jordan."

Young Leader, for the best paper presented by a member of the IDA Young Leaders Program demonstrating scientific originality on a topic that is relevant and important to the fields of desalination and/or water reuse.

Winner:

Nicholas Charles Nelson, B.Eng, Head of Competence Centre for Water Treatment, Omya International, Switzerland, for "Techno-Economic Evaluation and Pilot Testing of New Stabilization Process for Desalinated Water."

► Emerging Leader Achievement Award



Almar Water sponsored the Emerging Leader Achievement Award in Desalination and Water Reuse at this year's World Congress, made to a member of the IDA Young Leaders Program, with a monetary award of \$5,000 US.

Winner:

Steven Lam, NPI Department Manager, Gradiant Corporation, United States.

► Delegate-voted Awards

In addition, delegates at the World Congress cast their votes for winners in four categories:



Best Moderator: Sue Murphy

Best Moderator: Sue Murphy, Chief Executive Officer, Water Corporation, Australia, for "Desalination in Australia" in Technical Program Plenary Session

Best Session Chairman:

Guillaume Claret, Chief Operating Officer, H2O Innovation, Canada, for

session on Desalination and Water Reuse in Industrial Applications II – Mining and ZLD.

Best Presenter:

Daniel Baaklini, B.Eng, M.Sc, Research Engineer, Veolia Research & Innovation, France, for paper entitled "Optimized One-Step Pretreatment Enhancing the Benefits of Air Flotation and Media Filtration."

Best Poster:

Val S. Frenkel, Ph.D., P.E., D.WRE, Vice President, Greeley and Hansen, United States, for paper "Desalination or Water Reuse." ■

Spotlight Shines on High Level Delegation from DEWA

هيئة كهرباء ومياه دبي
Dubai Electricity & Water Authority



Dr. Yousef Ebrahim Al Akraf, Executive Vice President, Business Support and Human Resources for DEWA, represented the Authority at the Opening Ceremony of the 2017 IDA World Congress. DEWA is recognized worldwide for its commitment to sustainability.

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DEWA was also a valued sponsor of the Closing Reception Luncheon and Gala Awards Presentations.

"We are very grateful for DEWA's support of our 2017 World Congress and look forward to presenting our 2019 World Congress in Dubai under DEWA's auspices. We have enjoyed a long and valued relationship with DEWA and welcome the opportunity to further strengthen those ties," said Shannon McCarthy, IDA's Secretary General.

DEWA and Dubai are in the forefront of desalination and power technology. Since Dubai Electricity and Water Authority (DEWA) was formed on 1 January 1992, DEWA has made considerable achievements, to be ranked today as one of the best utilities in the world. DEWA undertook ambitious initiatives and development projects combining economic growth, energy sustainability and a clean and safe environment. DEWA accomplishments to date and world-class performance in desalination and energy has set an example for rest of the World.

As part of Dubai's Clean Energy Strategy 2050 to make Dubai a global center for clean energy and green economy, DEWA's strategy aims to provide 7% of Dubai's energy from clean sources by 2020, 25% by 2030, and

75% by 2050. With completion of the expansion of power at Station M by 2018, this will boost DEWA's current installed capacity of 10,000 MW of electricity and 470 million imperial gallons per day (MIGD) of desalinated water to meet Dubai's demand. DEWA planned Research and Development Centre at the Mohammed bin Rashid Al Maktoum Solar Park will support the UAE and Dubai's innovation strategy in countless ways.



New Year, New Ideas (cont.)

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the power of a circular water strategy in reshaping lives. IDA attended at the invitation of Brazil's Ministry of the Environment, which along with Governor of Rio Grande do Norte State, and Mayor of João Camara welcomed IDA to tour the project and talk with the many people whose lives have been improved with reliable access to fresh water. IDA has also stepped up its commitment to promote the use of renewables to power desalination with the signing in São Paulo of a collaboration

agreement with the Global Solar Council. We are also pleased to include an informative article announcing availability of a new manual on Harmful Algal Blooms (HABs) and Desalination that was unveiled during our World Congress.

On meeting the global challenge of water sustainability, IDA has officially incorporated the IDA Sustainable Water Resources Foundation and you will hear more about it in the months to come. ■

What Industry Leaders Are Saying about the World Congress

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I was delighted to participate for the first time at the IDA World Congress in São Paulo, a city that brings back fond memories from the four years my family and I spent in Brazil as part of previous responsibilities. The Congress offers a unique opportunity to meet with the leading stakeholders of reuse and desalination world, be it clients, competitors, subcontractors, R&D, professors, from all professional levels: executives, engineers, sales forces, academics, etc. As a speaker, it was a pleasure to meet all the CEOs participating at the panel session on Wednesday, October 18, and to realize we share the same vision about market trends, key success factors and future opportunities.

"I must also say, this was an extraordinary Congress for SUEZ, as we presented our new Business Unit 'Water Technologies and Solutions' that enriches our portfolio of solutions, especially regarding reuse—as well as for our active participation with 10 papers and posters in the technical program."

Jean-Luc Alexandre, Chief Operating Officer,
SUEZ Treatment Infrastructure

“

The IDA World Congress in Brazil was a huge challenge for all of us – the water companies, the Congress organizers, the world's water partners, and Brazil itself. The difficult moment that Brazil is going through has increased its success. We all win: the country that hosted the largest water companies in the world, which shared their experiences and technological knowledge with us; the world water community that had the opportunity to learn more about this country, which is the second largest freshwater reserve in the world; the IDA that had to reinvent itself to maintain the level of grandeur of its Congress; and the technologies for water that were discussed, debated and developed. It was a fantastic experience that made all of us better."

Yves Besse, General Manager, Veolia Water Technologies Projects Latam

“

In a world more uncertain each day, the solution of water scarcity problems becomes crucial. As climate variability increases, we need to explore all alternatives to cope with water scarcity. The 2017 IDA World Congress brought to our attention the importance of considering water reuse and desalinations as important alternatives to face that challenge."

Benedito Braga, Secretario de Estado, Secretaria de Saneamento e Recursos Hídricos

Genesys at the IDA World Congress, São Paulo, Brazil

By Phil Morton

This was my first experience of the International Desalination Association (IDA) world congress and I was not disappointed by the variety of topics and the content of papers. There was even a whole session dedicated to my area of expertise within the Genesys family – mining and zero liquid discharge systems.

Our stall was in a prime position, so delegates spotted it as soon as they entered the exhibition hall. The warm orange glow of the sun rising over three pyramids on the Genesys banners drew attention immediately, despite wonderfully extravagant oversized pavilions promoting 'big boys' such as Veolia, Toray and Suez.

Our presence was all the better for having a crack team on hand, including Nuria Peña, who presented yet another great paper, which generated a huge amount of interest, Ursula Annunziata and Richard Martin. We hardly saw Jaime Sepulveda due his hectic schedule of meetings. He is one of the directors of The Asociación Latinoamericana de Desalación y Reuse del Agua (ALADYR), which recently became affiliated with the IDA.

As a first-timer at the congress and a newbie to the industry, my impression of the event was positive, reflecting an industry that is on the up. This was echoed in the continuous stream of potential customers who visited our stand, many of whom expressed a strong interest in our membrane cleaning technologies, particularly Genairclean with microbubbles and our neutral pH cleaner Genesol 61. There was a high level of Spanish speakers in attendance, so it was helpful to have

“

During a whole working week, you learn the latest in innovation and technologies, meet the leaders of the water industry. It was a great opportunity to learn about most interesting projects and most of all, meet old friends.”

Ghassan Ejeh, Senior Vice President, Besix SA, Director of Sanotec, SAFI and ASPCL Water companies

Jaime and Nuria with us. Ursula's Latin-Spanish-Italian version of Portuguese also came in handy!

The baton was handed over to Dubai at a very well attended lunch, where Ursula starred in the official band – Ursula & the Salty Dogs



See video at [https://vimeo.com/246820230!](https://vimeo.com/246820230)

All in all, I thoroughly enjoyed my IDA World Congress experience. Even though it isn't on the same scale as Aquatech or the mining events I attend, the level of expertise and industry advancements that were presented, exhibited and discussed attracted a healthy stream of visitors. There was a sense of competition in the air as providers sought to secure business from new industries that are embracing membrane separation technologies as well as existing clients with changing needs. There are opportunities for all of us to benefit from.

Hope to see you all in Dubai!

This article first appeared in Genesys International's newsletter and is reprinted in IDA Connections with their kind permission.

“

The IDA conference in São Paulo was a true global event where policy, science, innovation and industry came together to shape the future of water reuse and desalination.”

Prof. Maria Kennedy, PhD, Professor of Water Treatment Technology, Department of Environmental Engineering and Water Technology, UNESCO-IHE Institute for Water Education

“

The IDA World Congress is unique among the many water events worldwide for bringing together top tier companies, top tier researchers and rising young professionals in the desalination and water reuse area. The unmatched opportunities for informal networking, the experience-driven presentations, and the leading-edge exhibition all combine to make this a truly productive use of time.”

Professor John H. Lienhard V, Director, Abdul Latif Jameel World Water and Food Security Lab; Director, Rohsenow Kendall Heat Transfer Laboratory; Abdul Latif Jameel Professor of Water and Mechanical Engineering, Massachusetts Institute of Technology

“

The IDA World Congress in São Paulo was a wonderful way to reconnect with old friends and meet new ones across the entire desalination industry. It was fascinating to hear of the innovative smaller scale projects such as Brazil's Agua Doce Program as well as the massive projects underway in Dubai. Thank you for a very Brazilian event!”

Sue Murphy, Chief Executive Officer, Water Corporation

“

It was my first IDA World Congress, and I was impressed by the strong interest and commitment of the private sector to tackle some of the major water challenges. I would be happy to help facilitate strong presence of the public sector and representatives from international organizations in the next edition— looking forward to Dubai 2019.”

Stefan Uhlenbrook, Prof. Dr. Coordinator, United Nations World Water Assessment Programme (WWAP) Director, Programme Office on Global Water Assessment, UNESCO

IDA World Congress Highlights

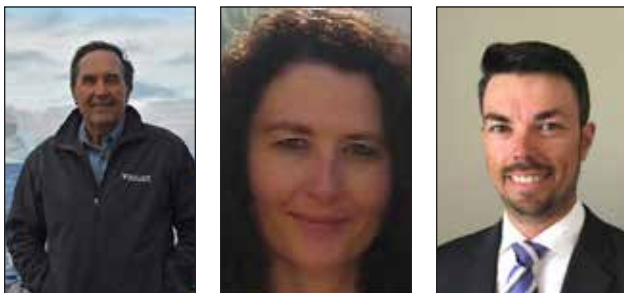
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IDA World Congress Highlights



First Ever Manual on HABS and Desalination Sponsored by MEDRC, USAID and IOC Is Published



By Dr. Donald Anderson, Dr. Siobhán Boerlage and Dr. Mike B. Dixon (Left to right)

A new manual on harmful algal blooms (HABs), “Harmful Algal Blooms (HABs) and Desalination: A Guide to Impacts, Monitoring, and Management”, was launched at the 2017 IDA World Congress in São Paulo. Prepared by an editorial team consisting of three experts on HABs and/or desalination – lead editor Dr. Donald M. Anderson, Dr. Siobhán F.E. Boerlage and Dr. Mike Dixon B. Dixon, this manual – now available for free download – offers insights into managing the problems caused by HABs.



Video Interview - How to defend against harmful algal blooms. Mike Dixon discusses new guidance from UNESCO on harmful algal blooms and how they impact desalination plants. www.tinyurl.com/yd39b2zf

HABs: A Growing Problem

Algae have long been an issue impacting desalination plant operation in areas prone to algal blooms or where macroalgae (seaweeds) and detritus became dislodged from the seabed. Blooms or more accurately harmful algal blooms (HABs) of microscopic algal species (phytoplankton) are particularly challenging in seawater water reverse osmosis (SWRO).

HABs are broadly classed as toxic or non-toxic and pose two main operational risks in desalination. Marine algal toxins may be produced by toxic blooms such as those caused by *Alexandrium*, *Pyrodinium*, and *Gymnodinium* species that release the neurotoxin saxitoxin. If they are present in sufficiently high concentrations in the seawater and they breakthrough during the desalination process, they represent a potential health risk to the safety of desalinated drinking water.

Non-toxic blooms can increase the suspended solids and organic load in seawater beyond design thresholds in high biomass blooms, threatening water supply security through unplanned outages and loss of production. This may manifest at any point in the process from blinding of intakes (rare) through to overloading of pretreatment unit processes and/or failure of the SWRO system itself.

Should pretreatment fail to produce water to meet RO guidelines, plants may be forced to void warranties and continue operating or shut down to avoid the risk of irreversible RO membrane fouling through accelerated (bio)fouling. In the latter case, they may also incur cost penalties associated with loss of production.

When blooms are infrequent or of short duration, operators and designers may elect to turn down production or shut down SWRO plants, if contract obligations allow. In areas subject to frequent and prolonged blooms and where high plant availability is required, additional pretreatment such as dissolved air flotation (DAF) began to be employed as early as 1995.

The prolonged and extensive 2008/2009 bloom of the non-toxic *Cochlodinium polykrikoides* (recently renamed *Margalefidinium polykrikoides*) in the Gulf of Oman and the Gulf was unprecedented in the industry and led to massive impacts. SWRO plant shutdowns were up to four months long as conventional pretreatment processes, based on ferric chloride coagulation and single stage dual media filtration (DMF), struggled to remove the increased biomass and produce the required RO feedwater quality.

One plant reported 100% RO membrane replacement due to severe biofouling. Thermal desalination plants in the region generally continued to operate without major issue throughout the bloom, as phytoplankton blooms generally pass through intake screens, and thermal processes are very forgiving of source water quality.

Globally, HABs similar to the 2008 *Margalefidinium* bloom are increasing in frequency and severity. Impacts

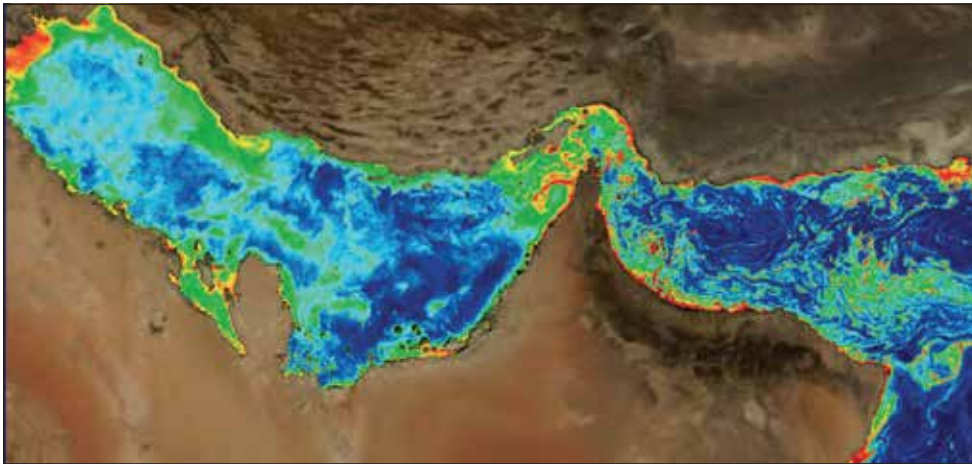


Figure 1. Chlorophyll concentrations captured by the MODIS Aqua sensor (NASA) from February 6, 2016, showing typical bloom patterns for the Gulf.

of HABs on desalination facilities are thus a significant and growing problem, made worse by the lack of knowledge of this phenomenon among plant operators, managers, engineers and others involved in the industry, including regulatory agencies.

Development of the Manual

Recognizing this problem, the Middle East Desalination Research Center (MEDRC) and the UNESCO Intergovernmental Oceanographic Commission (IOC) organized a series of conferences in 2012 and 2014 under the patronage of HE Mohammad Al Mahrouky, Chairman of the Oman Public Authority for Electricity and Water in Muscat, Oman, to bring HAB researchers and desalination professionals together to exchange knowledge and discuss the scale of the problem. Recommendations from these meetings included the preparation of a “guidance manual” to provide information to desalination plant operators and others in the industry about marine HABs, their impacts and the strategies that could be used to mitigate those impacts.

With support from the US Agency for International Development (USAID) and the IOC Intergovernmental Panel for Harmful Algal Blooms (IPHAB), the editorial team was assembled in 2015.

Three years of extensive consultation and collaboration with numerous HAB and desalination industry specialists from several disciplines culminated in the publication of “Harmful Algal Blooms (HABs) and Desalination: A Guide to Impacts, Monitoring, and Management”. Over

11 chapters, the manual covers multiple topics and includes one chapter with 12 case studies that contains practical information for designers and operators.

We recognized a clear need for the manual during the first HABs and Desalination Workshop in Oman in 2012. The challenge was then to assemble a team of authors from the HAB and desalination fields to work together to bring this idea to fruition.

In line with recommendations from the World Health Organization, we included a chapter describing risk assessment frameworks and the multi-barrier approach that can be used to assure safe drinking water in the face of a toxic marine HAB, along with HAB Management Response Plans.

Compilation of this manual was a major undertaking, requiring the cooperation of scientists and engineers from multiple disciplines, including a number where interactions have been rare in the past. We hope the accumulated material proves useful, and plan to keep this document updated through time and readily available through the Internet. The editors welcome questions, comments and suggestions that can make this compilation more useful and accurate.

The manual is available online for download at www.ioc-unesco.org/desalination-HAB. Please contact Henrik Enevoldsen (h.enevoldsen@unesco.org) to request a printed copy of the publication (also free).

Renowned HAB expert Dr. Donald Anderson is a Professor in the Biology Department at the world-famous Woods Hole Oceanographic Institution and Director, U.S. National Office for Harmful Algal Blooms. He can be reached at danderson@whoi.edu

Based in Queensland, Australia, Dr. Siobhán Boerlage has over 20 years international experience in desalination as a consultant, academic and in operations. She can be reached at Desal@boerlageconsulting.com

Dr. Mike Dixon is a Director of the International Desalination Association and Chief Technology Officer of WaterNEXT. He can be reached at mikedixon@desalination@gmail.com. ■

Spotlight On Water Reuse

IDA to Present Second International Conference on Water Reuse and Recycling: "Making Every Drop Count" Valencia, Spain, June 2018

IDA announces plans to present its second International Conference on Water Reuse and Recycling, to be held June 2018 in Valencia, Spain.

"Water reuse is an important part of IDA's mission, and we are looking forward to present an international conference with a full circle of stakeholders on this vital aspect of water resources management every other year, in between our World Congresses," said Shannon McCarthy, IDA Secretary General.

The theme of the 2018 conference is "Water Reuse: Making Every Drop Count." Presented in partnership with AEDyR, IDA's Spanish affiliate, it will build on the success of IDA's inaugural event, which was held in Nice, France, in September 2016. That event attracted delegates from over 30 countries who shared their experience and expert knowledge on the state-of-the-art in water reuse science, policy and regulations, technology and practice. The first IDA Water Reuse Conference featured two

plenary and 10 technical sessions and two lively panel discussions, and offered multiple venues for networking that created an ideal environment for idea exchange and helping delegates sharpen their vision for turning water reuse into a key cornerstone for sustainable long-term water supply worldwide.

One of the goals for the 2018 event is to extend its reach to additional stakeholders in developing water reuse programs, such as governmental entities, policy makers, legal teams, NGOs and members of the financial community.

"Our 2017 World Congress in São Paulo provided a great model for engaging an expanded group of stakeholders who are interested in ensuring sustainable water supplies. We want to involve them in the discussion," said McCarthy.

As with the 2016 event, the 2018 Conference will include presentation of IDA's Water Reuse and Conservation Awards that recognize recent important achievements in the field. The 2016 award recipients will be part of the committee for the 2018 IDA Water Reuse and Conservation Awards.

More information will be coming soon – please visit the IDA website www.idadesal.org and IDA LinkedIn page for updates and additional details. ■

2016 IDA Water Reuse and Conservation Award Winners

At its 2016 Water Reuse Conference, IDA conferred its inaugural Water Reuse and Conservation Awards in three categories. IDA wishes to thank 2016 Conference Co-Chairmen Leon Awerbuch and Nikolay Voutchkov for making the inaugural conference a resounding success.



Winners:

Orange County Water District, USA: Exceptional Utility Leader in Water Reuse and Conservation, to recognize the outstanding performance

of public or private utilities that have implemented successful leading-edge water reuse and conservation programs and projects.

Suez, France: Distinction Award

Water Corporation, Australia: Merit Award

Dr. Masaru Kurihara, Toray Industries, Inc.: Outstanding Professional in Water Reuse and Conservation, in recognition of individuals who have demonstrated exceptional contributions to the development and implementation of landmark water reuse projects, and

advancement of technology and applied science in the field of water reuse and conservation.

Professor Neal Chung, National University of Singapore
Distinction Award

Dr. Roberto Mazzini, Veolia Water Technologies Italia
Distinction Award

Veolia Water Technologies, France: Industry Technology and Innovation Leader in Water Reuse and Conservation, to recognize the outstanding performance of private consulting firms and technology and equipment providers that have achieved disruptive advances in water reuse and conservation technology or solutions that have enabled significant reduction in energy use, carbon footprint and costs of alternative water supplies.

Desalitech, USA: Distinction Award

Dow Water & Process Solutions, USA: Merit Award

Water Reuse: A Growing Market of Opportunity and Challenge



By Liz Bury, Editor, Water desalination + reuse

An industry survey by Water desalination + reuse (www.desalination.biz), IDA's official members' magazine, has found that while our industry has the technical expertise, innovative ideas, and will to service customers' water needs, a lack

of money, reluctance to take chances on new technology, and instances of poor governance present challenges.

Our survey was conducted during the four weeks to July 19, 2017, to gauge perceptions among desalination and water reuse professionals about the factors that are influencing the development of water reuse markets globally. The results from 347 respondents from a wide range of industry roles across the Americas, Asia Pacific, Europe, and Middle East and Africa (MEA), provide a broad set of perspectives on what is driving reuse, and how markets are shaping up.

The findings reinforce the generally held view that for those working in the water industry in the Americas, Asia Pacific and MEA, the challenges around reuse are more immediate compared to those in Europe.



Drivers

Water scarcity and cost emerged as the factors considered to be the strongest drivers of water reuse. Scarcity was highest, scoring 3.79 out of a possible five points, followed by cost at 3.52. This puts them on average between a "mid-level" and a "strong" driver.

Scarcity was a concern particularly among those working in the Americas, and even more so for the sub-group focusing on municipal projects. Cost was scored the highest by those working in MEA, closely followed by the Americas and Asia Pacific, while for Europe, the cost factor is markedly less of a strain.

In fact, cost scored highly both as a driver and a barrier to water reuse: the cost of water is a driver because it encourages optimal use of a precious commodity; and the challenges of financing specialized water reuse plants—including the development costs and the price of water purification technology—is seen as a barrier to developing new projects.

Barriers

Cost was rated as the most significant barrier to reuse, scoring 3.56 out of a possible five points. In the write-in comments on barriers, one chief/ head of department of an industrial plant owner/ operator, based in MEA, noted that "technology cost," was a barrier. Meanwhile, "availability of capital," was a concern for the director of a European engineering firm.

Cost was rated most strongly as a barrier by respondents working in Asia Pacific, who scored it higher than those in other regions.

Innovation

Out of seven suggested fields of innovation in the marketplace, water treatment technology topped the list, scoring 3.79 out of a possible five points. The rating is encouraging for technology companies, write-in comments from several of which suggest that introducing new technologies to the market is a challenge.

With very little between them, at 3.3 points each, innovations in water quality monitoring, system design innovations, and energy saving innovations were grouped together in mid-table positions, rated between "mid-level" and "strong" for innovation.

Spotlight on Water Reuse

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Technology

On technology, respondents scored the level of effectiveness of eight different types of tech potentially applicable to reuse. The resulting ranking was unsurprising in that reverse osmosis (RO) topped the list with an enthusiastic score of eight out of 10 points, buoyed by respondents working in the Americas, who rated RO at 8.11, and those working in Asia Pacific, who scored it 8.05.

In second place, ultrafiltration (UF) was considered a more effective technology by respondents whose roles cover Asia Pacific, where it scores 7.12 out of a possible 10 points, compared to the overall average score of 6.81. Those who indicate that they work in the municipal sector also score UF higher than average, at 7.09.

Public Perceptions

In the comments on barriers to reuse, public opinions were repeatedly cited, from the general, "human perception," (director, engineering consultancy, Asia Pacific); to the many comments focused on public understanding, such as "lack of proper education," (consultant, municipality, Americas); to those reflecting public fears about potential health risks, "sanitary concern," (chief / head of department, university, Europe).

Survey respondents considered public perceptions the biggest barrier by far in the case of direct potable reuse (DPR), scoring this at 3.94 out of a possible five points, with 54.60 per cent of respondents seeing it as a "very strong" barrier. The score for public opinion as a barrier to DPR rises to 3.94 for those who work in the municipal sector.

Market Outlook

How do you rate the following as drivers of water reuse in your markets to date?

Water scarcity is by far the most important driver of water reuse globally, with cost a strong second, while regulation and technological drivers are considered more neutral factors



The various barriers and challenges do not appear to have dampened the industry's optimism on the outlook for the water reuse market. Growth in water reuse revenues is expected to be 29 per cent on average in the 12 months ending 30 June 2018. Respondents whose role covers Asia Pacific and/ or MEA region(s) are the most bullish, pegging their growth expectations at 30 per cent in the coming year, while those working in the Americas anticipate growth of 28 per cent, and in Europe, it's 24 per cent.

With thanks to former IDA Board Director Nikolay Voutchkov, and Abraham Negaresh, Senior Process Engineer at WRc plc, for their expertise and support in shaping this research project.

Download your free copy of the full research findings



www.desalination.biz/downloads/Water-Reuse---Drivers--Innovations-and-Public-Perceptions/31 ■

IDA and Global Solar Council Collaborate to Promote Worldwide Seawater Desalination Technologies Powered by Solar PV



Global
Solar
Council

IDA has taken another step forward in promoting the potential for renewable energy powered desalination by entering into a collaboration with

the Global Solar Council (GSC) to promote desalination technologies powered by solar power.

The agreement aims to accelerate the potential for cost reductions and innovative solar energy solutions to desalination by sharing best practices and technological developments, leveraging synergies to further develop the solar and desalination markets focusing primarily on emerging markets.

Desalination technologies can improve the quality of life for people around the world including remote areas and are developing rapidly, offering a key solution for water supply in coastal areas and beyond. Given the emphasis on reducing desalination costs and environmental impacts, solar power can be the right way to solve the problem as a decisive tool to address power needs, sustainable development goals and climate change.

“Desalination provides the world’s only new source of fresh water for the world’s growing population and economies. The use of solar energy to power desalination is a major step forward in our industry’s quest to reduce cost and lower energy consumption. The agreement with the Global Solar Council represents an important step forward in achieving this goal,” said Emilio Gabbrielli, Past President of IDA, who signed the agreement during the World Congress.

“Today, the water cycle absorbs 4% of the total electricity produced in the world, and this number is expected to double in a few decades. Solar photovoltaic, being locally produced, is the cheapest, cleanest and most reliable source of energy, and will be the best to support water availability at low costs also in the most remote and poor areas. The cooperation with IDA will be strategic for this to happen,” said Gianni Chianetta, Co-Chairman of Global Solar Council and Vice President for International Affairs at Italian association Italia Solare.



Gianni Chianetta (left) and Emilio Gabbrielli (right)

Through the agreement, IDA and GSC will share mutual interests, experiences and information. In particular, they will collaborate on the development, testing and demonstration of advanced and innovative energy-efficient seawater desalination technologies that can be powered by solar as a way of reducing environmental impacts.

In this way, IDA and GSC will work in co-operation, including through capacity-building joint events, advocacy and awareness campaigns to enlarge their global network of stakeholders, towards the mutual goals of sustainability, energy efficiency and technology transfer, excellence in operation, economic development and environment friendly technologies.

The Global Solar Council is a non-profit organization founded in 2015 to coordinate the international advocacy efforts of the world’s solar energy associations. It represents national and regional solar associations from both established and emerging markets, including the world’s largest markets of Australia, China, Europe, India and other Asian countries, Middle East, South America and the United States. Through these associations the Global Solar Council represents over 2000 companies active across the entire solar value chain. GSC’s vision is to ensure that solar energy is the leading contributor to the world’s energy system, by aiming to create 10 million solar jobs by 2030. GSC’s mission is to encourage the rapid and wide-scale adoption of solar energy through cooperation, education and training. ■

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IDA Visits Agua Doce Project in Brazil

On the day following the conclusion of the World Congress Technical Program, IDA's Comptroller and Past President Emilio Gabbielli and Secretary General Shannon McCarthy visited the Maria da Paz community project in northern Brazil. Brazil's Ministry of the Environment, Governor of Rio Grande do Norte State, and Mayor of João Camara welcomed IDA's leaders, who were joined by representatives from the World Bank, Global Solar Council, Abdul Latif Jameel World Water and Food Security Lab at the Massachusetts Institute of Technology, and Department of Solar Energy & Environmental Physics at Ben Gurion University of the Negev.



Representatives from IDA and other prominent organizations visited the Maria da Paz community project in northern Brazil

The Maria da Paz community project is one of the 500 installed projects of the Agua Doce program. Together these projects benefit half a million people suffering from lack of drinking water.

"Desalination technologies and water reuse are becoming mainstream water supply solutions in creating a circular water strategy to meet growing water needs. Desalination plays a very important role in providing a reliable supply of new water in regions where brackish water or seawater is available, and coupling desalination systems with solar power, such as Agua Doce's Maria da Paz community project, opens the door to providing clean water to many more people who currently lack access to adequate supplies of fresh water," said Ms. McCarthy.

A school teacher from the area commented on the success of the Agua Doce program, noting that, "Until two years ago, the children suffered from chronic diarrhea and looked unhealthy. However, since the desalination unit has been in operation, the children feel and look healthy."

The semiarid region of Northern Brazil represents over 22

million inhabitants of which nine million live in rural areas and suffer from extreme poverty and the effects of climate change that impact fresh water availability. Using a reverse osmosis (RO) solar powered unit, the project in Maria da Paz offers an environmentally sustainable option to provide clean drinking water for more than 60 rural families. The concentrate from the RO unit is utilized to provide water for livestock.



IDA with children at Maria da Paz

At other community sites of the Agua Doce program, the process is fully circular using the reject water to grow Tilapia fish (excellent, for sashimi) wherein water from the fish tanks is further used to irrigate halophyte plants to provide fodder for feeding goat and sheep.

A key benefit of the Agua Doce program is the social participation of the community in managing the desalination units and integrated production systems. IDA has provided volunteer technical guidance to the Agua Doce program, and with the cooperation agreement between IDA and Global Solar Council, the IDA further endorses the strategic adoption of circular water programs using solar-powered RO units for rural community development. ■



Solar panels at Maria da Paz

What You Should Know about IDA's Committees

IDA's committees are a key aspect of the association's governance. IDA has nine Standing Committees – Audit; Conference/World Congress; Constitution and Bylaw; Education, Scholarship and Fellowship; Finance; Membership and Election; Operations; Publications; and Technical Programs – and also has several Special Committees.

We invite you to learn more about our committees as well as IDA leaders and members who serve on them.

STANDING COMMITTEES

Audit

The mission of the Audit Committee is to support and interact with the external auditors as necessary and to support the comptroller in fulfilling his responsibility of review of the activities of the Association, and specifically the Treasurer's and Secretary General's activities to see that they are in accordance with the Constitution, Bylaws, and directives of the Board and to duly inform the IDA membership at appropriate times in order to ensure full-disclosure and transparency of the IDA *modus operandi*.

Chairperson: Dr. Emilio Gabbrielli

Co-Chairperson: Mr. Guillaume Clairet

Member: Ms. Hattie Wang

Conference/World Congress

The main function of this committee is to prepare the Technical Program for the World Congress. This includes preparing the Call for Papers and allocation of abstracts; preparing session categories; nominating session co-chairs; and then reviewing all abstracts, draft manuscripts and final presentations.

Chairperson: Mr. Imad Makhzoumi

Co-Chairpersons: Mr. Fady Juez, Prof. In S. Kim

Members: To Be Announced

Constitution & Bylaws

The Constitution Committee reviews the Association's Constitution and Bylaws and, as needed, makes motions to amend the Constitution or Bylaws following the procedures outlined in the Constitution.

Chairperson: Mr. Mounib Hatab

Co-Chairperson: Mr. Devesh Sharma

Members: Mr. Carlos Cosin, Mr. Imad Makhzoumi, others to be announced

Education, Scholarship and Fellowship

This Committee administers the IDA Scholarship, Education and Fellowship programs. They recommend candidates for the programs and make appropriate awards according to program-specific criteria.

Co-Chairpersons: Dr. Ruan Guoling

Co-Chairperson: Mr. Li Youqing

Members: Ms. Li Linmei, Prof. In Kim, Dr. Corrado Sommariva, Prof. Noam Lior, Dr. Emilio Gabbrielli

Finance

The Finance Committee, which reports to the Treasurer, reviews the finances of the Association and prepares quarterly financial reports based on data supplied by the bookkeeper and accountant. The Treasurer reviews the investments of the Association and makes quarterly recommendations to the President on a strategic approach regarding investments.

Chairperson: Mr. Carlos Cosín

Co-Chairperson: Mr. Alejandro Sturniolo

Members: To Be Announced

Membership & Elections

The Membership & Elections Committee is responsible for reviewing all new members and submitting the names to the Board for acceptance on a regular basis. The Committee is also responsible for recommending any increase in dues and recommending any new membership categories for review. The Committee also develops new membership development campaigns to increase and retain membership. The other function of the Committee is to prepare a slate of directors once every two years and provide this to the office to assure that the ballot for new directors is adequately populated. The Membership Committee must have at least one General Member for each region.

Chairperson: Mr. Johnny Obeid

Co-Chairperson: Mr. Domingo Zarzo Martinez

Members (others to be announced): Ms. Zamzam Al Rakaf, Mr. Gerard Canton, Mr. Juan Miguel Pinto

Operations

The Operations Committee is the executive committee of IDA, chaired by the President and its composition spelled out by the Constitution: The Operations Committee shall be composed of eight Directors to

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include the President, 1st Vice President and 2nd Vice President. The Secretary General is a member *ex officio*.

Chairperson: Mr. Miguel Angel Sanz

Members:

Eng. Zamzam AlRakaf	Mr. Youqing Li
Mr. Borja Blanco	Mr. Maurice Neo
Mr. Carlos Cosín	Mr. Devesh Sharma
Mr. Rachid Ghamraoui	

Publications

The Publications Committee reports to the Editor. Together with the Editor, the Publications Committee reviews all IDA publications – both new and existing – and makes recommendations to the Board on updating existing publications. This Committee also includes the Association’s electronic media assets such as the website, podcasts and videos production.

Chairperson: Dr. Rick Stover

Co-Chairperson: Eng. Mohammed Al Shahrani

Editor: Dr. Corrado Sommariva

Members: To Be Announced

Technical Programs

This Committee organizes all IDA Technical Programs including conferences, seminars, workshops and other events. In some cases, they are standalone events, while others are co-sponsored or supported by IDA and other organizers. The roles for each event are reviewed and selected based on the stated criteria for acceptance and the agreed-upon role that IDA will play.

Chairperson: Mr. Borja Blanco

Co-Chairperson: Dr. Mike Dixon

Members:

Mr. Guillaume Clairet	Mr. Wade Miller
Mr. Joan Galtes	Mr. Alistair Munro
Dr. Blanca Jimenez-Cisneros	Mr. Mehul Patel
Prof. Maria Kennedy	Mr. Rodrigo Segovia
Mr. Ralf Krueger	Mr. Troy Walker
Mr. Hiep Le,	Mr. Greg Wetterau
Mr. Ravid Levy,	Mr. Domingo Zarzo
Ms. Melissa Meeker	

SPECIAL COMMITTEES

Affiliates

The role of this Committee is to review the ideas and concerns of each affiliate – both regional and association affiliates. The Committee should be composed of a representative from each affiliate.

Chairperson: Mr. Shawn Meyer-Steele

Co-Chairperson: Mr. Antonio Casanas

Members:

Mr. Juan Miguel Pinto	Mr. Ziad Salibi
Mr. Greg Wetterau	Dr. Guoling Ruan
Dr. Masaru Kurihara	Mr. Fayyaz Mubeen
Dr. Mike Dixon	Mr. Tan Ngo Chiau
Mr. Borja Blanco	Mr. Ziad Salibi
Dr. P.K. Tewari	Mr. Fayyaz Mubeen
Mr. Yoshinari Fusaoka	Eng. Mohammad Alshahrani
Dr. In. S. Kim	Mr. Ali Redha Hussain

Awards

This Committee nominates and selects the Best Paper Awards at the IDA World Congress and also nominates and selects candidates for special categories, such as Lifetime Achievements, World Water Masters Awards and others. The Committee insures all authors and presenters are given an equal and fair chance to win. They establish the selection criteria and evaluation methodology and determine the best way and time to announce the winners after the World Congress. The Committee also promotes the awards within the two-year term.

Chairperson: Dr. Nobuya Fujiwara, Chair

Co-Chairperson: Mr. Domingo Zarzo Martinez, Co-Chair

Members: To Be Announced

Energy and Environmental Committee

The ultimate objective of the Energy and Environment Committee is to encourage the industry to implement best practices on energy efficiency in all desalination projects using the best available and most appropriate technologies according to the location of the plants. This committee will facilitate discussion of environmental issues associated with desalination. They will form a task force that will include experts in the industry and the environment.

Chairperson: Mr. Leon Awerbuch
Co-Chairperson: Mr. Devesh Sharma
Members (others to be announced): Dr. Richard Stover

Foundation/Public Outreach

The IDA Foundation Committee will build strategic alliances with utilities, industry, non-governmental organizations, governments, and international institutions to broaden the opportunities to support worthy activities in education, thought leadership and humanitarian endeavors related to water sustainability and the role of desalination and water reuse.

Chairperson: Ms. Shannon McCarthy

Foundation Committee Members:

Mr. Adil Bushnak	Mr. Juan Miguel Pinto
Mr. Abdulmajeed Alawadi	Mr. Antonio Casanas
Mr. Li Youqing	Ms. Blanca Salgado
Dr. Ruan Gouling	Dr. Emilio Gabbrielli
Mr. Borja Blanco	

Foundation Committee Advisor: Dr. Jim Birkett

Research and Development

This Committee reviews potential R&D development with other entities and offers guidance to facilitate capacity-building.

Chairperson: Dr. In S Kim

Co-Chairperson: Dr. Hideaki Kurokawa

Members:

Dr. Ahmad Al-Amoudi	Prof. Maria Kennedy
Dr. Don Anderson	Mr. Aik Num Puah
Mr. Ciaran O. Cuinn	Dr. Guoling Ruan
Prof. Tony Fane	Prof. John Lienhard
Prof. Johannes S. Vrouwenvelder	

Site Selection

This Committee is charged with reviewing all bids for the next IDA World Congress in 2021. The Committee comprises a global cross-section and endeavors to discharge its duties in a clear, transparent manner, so as to ensure that the most suitable venue is chosen to host the event.

Chairperson: Mr. Maurice Neo
Co-Chairperson: Mr. Mohammed Jaroudi
Members:

Mr. Borja Blanco	Mr. Johnny Obeid
Mr. Carlos Cosin	Mr. Juan Miguel Pinto
Dr. Masaru Kurihara	Mr. Miguel Angel Sanz
Mr. Shawn Meyer-Steele	Mr. Greg Wetterau

Financial Advisor: Mr. Carlos Cosin

Young Leaders Program

IDA’s Young Leaders Program allows emerging desalination leaders to connect, advance their careers, and promote interest in desalination around the world.

Chairperson: Mr. Juan Miguel Pinto

Co-Chairperson: Mr. Greg Wetterau

Members:

Mr. Mohamed Atta Aljaj	Mr. Nicolas Nelson
Mr. Magda Armendariz	Mr. Kamakshi Sharma
Ms. Monica Boodhan	Mr. Michael Warady
Ms. Holly Churman	Ms. Noami Jones
Mr. Eduard Gasia Bruch	Mr. Rahul Hampaul
Dr. Muhammad Wakil Shahzad	

Ex Officio on all IDA Committees: Ms. Shannon McCarthy, IDA Secretary General ■

IDA Seeks to Create Honorary Council

Since IDA’s founding, its leadership and members have represented a global “Who’s Who” of the desalination and water reuse industry. Their collective knowledge and wisdom has provided invaluable contributions to the Association. With this in mind, IDA seeks to create an Honorary Council comprising Past Presidents and Board members, past Secretaries General and other prominent leaders of the desalination and water reuse industry.

The formation of this Council requires a proposed change in IDA’s Bylaws, which must be voted on by the Board of Directors 50 days following its publication in this issue of IDA Connections. The proposed Bylaw follows below. Information about the nominees for the Council, as well as endorsement statements, will be included in the January/February issue of IDA Connections.

Bylaw - Article 12. IDA Honorary Council

1. Program Concept and Goal

At the decision of the Board of Directors, the Association will invite past Presidents and Board members, past Secretary Generals and other prominent leaders of the Desalination and Water Reuse Industry willing to volunteer their time to be part of IDA Honorary Council. The role would be to promote the Association and to assist the President, upon request, to give advice and support in resolving critical challenges the association might be facing, fundraise for programs and events, and any other initiative the Board of Directors chooses to nominate.

The goal of the Honorary Council is to leverage the wealth of knowledge, connections, and experience that resides with members of the Council to advance IDA's visibility and the fulfillment of its mission around the world.

2. Responsibilities

The Honorary Council, upon request of the President and Board of Directors, will be tasked to advise and assist with activities like raising funds and securing sponsorships and promoting Association events around the world. The events may include but are not limited to conferences, seminars, workshops, meetings, educational, and IDA SWRF gatherings.

3. Appointment and Duration

Nominations can be made by Board of Director members and will be confirmed based on a ballot vote by a majority of votes cast by Board of Directors members. The duration of the appointment will be one Board of Directors term and may be extended to the following term upon a majority of votes cast by the incoming board by ballot vote. This is an honorary appointment, made at the invitation of Board of Directors; as a result, the Board of Directors may rescind the "Ambassadorship" at any time. The Honorary Council will be balanced by regional representation and limited to ten representatives for each BOD term from five regions: Europe, Latin America and the Caribbean, Middle East and Africa, North America, Pacific and Asia). In special cases, the board may elect to add regional representatives as needed for specific tasks.

4. Compensation and Remuneration

The Association will not provide compensation for the Honorary Council member's time, and remuneration for expenses incurred in fulfilling this role should not be expected. Reimbursement of any expenses must be pre-approved by the Board of Directors.

5. Other Considerations

The members of the Honorary Council will have no authority to bind or enunciate formal policy on behalf of the Association. They must agree to adhere to and promote the goals and messaging strategy of the Association and differentiate between their personal (or corporate) positions and their role as a member of Honorary Council. In their role as Ambassadors, these individuals must remain neutral in expressing views about technologies, companies, Association politics or politics in general, and confidential deliberations of the Association, Association business, Association Board members and Association elections. A confidentiality agreement will be required. ■

Applications Now Being Accepted for MIT Water Innovation Prize



Do you have a water-related startup idea? If so, submit your application by December 31 to compete in the MIT Water Innovation Prize for up to \$30K

in innovation grants. Translate your research or idea into a business, get access to mentors and resources, and build your network of industry professionals and like-minded entrepreneurs passionate about water. MIT welcomes all approaches to water innovation, from policy and data analytics to engineering and product design

The MIT Water Innovation Prize is a startup competition focused on water innovation that awards up to \$30k in innovation grants annually to student-led teams from across the country. The innovation-focused main event of the MIT Water Club, its mission is to inspire and promote solutions to global water challenges by developing and supporting emerging student entrepreneurs.

Visit <http://www.mitwaterinnovation.org/> for rules. And please save the date for the Final Pitch Night on April 4, 2018 at 6pm on the MIT campus in Cambridge, Massachusetts.

Deepening Connections – Member News Section Coming in 2018

Starting with the January/February issue of IDA Connections, we will accept news items from our members for publication. Please feel free to send news about company developments, products/services, research findings and people. The deadline is the 20th of the month prior to publication: January 20, March 20, May

20, July 20, September 20 and November 20. Member news will be published space permitting and pending the review of IDA Connections' editorial staff.

Please send submissions as Word documents to editor Ann Seamonds at seamonds@seamonds.com. Images must be sent as separate attachments and must be high resolution jpeg files (at least 300 dpi at 4" x 6").

If you would like to contribute a more expansive article, please contact editor Ann Seamonds about your story idea. ■

International Water Summit

January 15-18, 2018

Abu Dhabi, UAE (ADNEC)

www.internationalwatersummit.com

AWWA/AMTA 2018 Membrane Technology Conference & Exposition

March 12-16, 2018

West Palm Beach, FL

www.amtaorg.com/event/2018

Global Water Summit 2018

April 15 – 17, 2018

Paris, France

www.watermeetsmoney.com

Oman Energy and Water Expo 2018

April 30 – May 2, 2018

Muscat, Oman

www.energyandwateroman.com

Desalination for the Environment Clean Water & Energy

May 6-10, 2018

Nantes, France

www.edsoc.com

Ozwater'18 - Australia's International Water Conference & Exhibition

May 8-10, 2018

Brisbane Convention & Exhibition Centre (BCEC)

www.ozwater.org

CaribDA 2018 – Biennial Conference & Exposition

May 29-June 1, 2018

Curacao

www.caribda.com/event/caribda-2018

Second Biennial IDA International Conference on Water Reuse and Recycling

June 2018

Valencia, Spain

www.idadesal.org

More information to follow

Singapore International Water Week 2018

July 8-12, 2018

www.siww.com.sg

Biennial Congress ALADYR

Santiago, Chile

October 9-11, 2018

www.aladyr.net

AEDyR XII Congress International

October 23-25, 2018

Toledo, Spain

www.aedyr.com

AWWA/AMTA 2019 Membrane Technology Conference & Exposition

Feb. 25 – Mar. 1, 2019

New Orleans, LA

More details to follow

IDA World Congress 2019

Dubai, UAE

www.idadesal.org

More details to follow

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