



CONNECTIONS

January / February 2016

Connecting People and Ideas to Water Solutions

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Call for Papers Now Open for IDA's International Water Reuse and Recycling Conference

IDA has issued a call for papers for its inaugural International Water Reuse and Recycling Conference, to be held on September 25-27, 2016 in Nice, France at The Hyatt Regency Nice Palais de la Méditerranée. The two-day conference, themed "Water Reuse and Recycling: Turning Vision into Reality," will be a combination of panels, plenary sessions and technical papers focusing on advanced technologies for water reuse and recycling that will make water available to municipal and industrial users.

IDA is seeking papers that address a number of topics including cutting-edge

technologies, direct and indirect potable reuse, non-potable and agricultural reuse, water quality monitoring and control, and advanced technologies for joint desalination and water reuse as well as industrial water reuse and recycling.

To be considered, authors must submit an extended abstract by March 31. Details about topic as well as the submission and selection process are available at the following URL or on the IDA website: idadesal.org/water-reuse-conference/call-for-papers/

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message

from the Secretary General

Patricia Burke



Welcome to IDA Connections! With a new year comes a new name for the former IDA News, our member newsletter.

The new name reinforces what we have heard from you: that IDA's core value is its role in facilitating and creating opportunities for connections between people, ideas and knowledge. Connections that help put you in touch with new colleagues or reinforce relationships with your existing circle of business associates and influencers. Connections that create opportunities to gain knowledge, share ideas and explore avenues to make our industry stronger and more relevant than ever. Connections that open doors to greater understanding and collaboration around the world, as desalination and water reuse assume even greater importance in helping the world solve the growing issue of water scarcity.

This insight came out of research conducted in the development of our most recent strategic plan. In truth, however, I think we knew it all along, but had never articulated it. Instead, we shaped a value proposition around our events, our publications, and the financial incentives to become part of IDA. These things are all important, but at the end of the day, they can never replace what's really important in our members and to our business: forming relationships with other people engaged in our industry.

That's really what IDA is all about.

Going forward, you will see this theme across all our communications platforms, from our website to publications, our business development program, and our

growing social media presence. It is part of our work to rebrand and reposition IDA, of reaching out to new prospective members around the world.

Connecting with people also means greater communication and engagement. Our inaugural Annual Report is designed to enhance communication about all that we do and to increase transparency in our organization. In this issue, you will also read about the formation of an "Informal Advisory Group to Review the IDA Constitution" that is part of this commitment. We believe that these action items are important aspects of fostering greater dialogue and engagement among all parties, and we welcome your feedback.

We hope that you will join us at our upcoming International Conference on Water Reuse and Desalination this coming September, and we invite you to submit an abstract for consideration in our technical program. Please also feel free to share this invitation with your colleagues. We will soon open the Call for Papers for our 2017 World Congress.

We also hope to announce the host agency for our Fellowship Program, an important initiative that is designed to connect the IDA Fellow and host agency in an attachment in which knowledge and new insights are shared to benefit of not only both parties, but also to the industry as a whole. You can read more about the Fellowship Program in the report written by Dr. Raed Bashitialshaer on page 7 in our 2014-15 IDA Fellow.

As always, I invite your comments and suggestions. You can connect with me at paburke@idadesal.org

IDA Board Initiates Review of Constitution



By Randy Truby and Lisa Henthorne

The International Desalination Association (IDA) was created to serve its membership and the desalination community. IDA has been built on democratic and transparent principles in meeting its mission, goals and objectives. Recently there have been questions from the membership and Board of Directors members on election procedures and other issues.

In response to the membership the IDA Board of Directors voted to create an “Informal Advisory Group to Review the IDA Constitution” (AG).

The AG consisted of six members, which included only one current Board of Directors member – Mr. Carlos Cosin Fernandez, the current Chairman of the Constitution Committee. Other AG members were:

- Randy Truby, Co-Chairman (Comptroller and Past President of IDA)
- Lisa Henthorne, Co-Chairman (Past President of IDA)
- Dr. Veronica Garcia Molina
- Dr. Ahmed Suliman Nasser Al-Arifi
- Mr. Graham Dooley

The mandate of the AG was to review the IDA Constitution and By-Laws to assess if there were steps that could be taken to improve transparency in the election process, as well as operation and management of IDA and its affairs.

Constitution amendments require membership approval by a 2/3 majority, and at least 2/3 of the membership must vote in order for the amendment to be adopted. By-laws address the general conduct of IDA’s business and therefore require only a simple majority of Board of Directors members support to be passed or amended.

The AG was organized in September 2015 and conducted its review during the following months. A report with recommendations was submitted at the end of December 2015.

The AG members all received copies of the current Constitution and By-Laws, as well as legal opinions, the Strategic Plan for IDA and other pertinent documents. The key information reviewed by the AG was the results of a survey of the current Board of Directors; survey questions prepared by Lisa Henthorne. The majority of individual Board of Directors members responded to the survey and answered with extensive and thoughtful suggestions.

All of the input was reviewed, discussed and weighed by the AG, and a series of comments and recommendations were prepared. The Final Report contained not only these recommendations but also other observations and suggestions submitted to the AG that were deemed to have merit and potential to improve IDA. The Final Report was presented to the Operations Committee and the President of IDA for follow-up action.

The Board of Directors will now review and discuss the recommendations and decide how to proceed to implement changes deemed to be of value, including potential changes to the IDA Constitution. If needed, a vote of the membership will be conducted to ratify suggested changes.

The International Desalination Association will continue to strive to be responsive and to serve the membership of IDA.

Update on The Global Clean Water Desalination Alliance, H2O minus CO2 at COP 21

The Global Clean Water Desalination Alliance, H2O minus CO2 was launched in Paris at COP21 on December 5, 2015, just before the opening of the big Action Day, whose purpose was to demonstrate that the world is massively mobilizing on a wide spectrum for the fight against global warming. If efforts continue at this pace, it should be possible to increase the ambition of the program and possibly reduce under 2 degrees the rise of temperature, hopefully even under 1.5 degrees – so as to save numerous islands and seashores.

IDA played a very active role in organizing the participants in the Alliance and will be included on the Board that is now being formed.

The Alliance was launched in front of the international press under the auspices of Dr. Sultan Al Jaber, State Secretary and Climate special envoy of the United Arab Emirates (UAE) and in presence of representatives of the French government. A panel moderated by Jean-Louis Bal, the President of Syndicat des Energies Renouvelables (SER), the professional organization of the renewable industry of France, discussed the Initiative and its objectives. Participants were H.E. Saeed AL Tayer, Vice – Vice Chairman, Dubai Supreme Energy Council; Dr. Ahmad Belhouli, CEO, Masdar; Paddy Padmanathan, CEO, ACWA Power; Jean-Louis Chaussade, CEO Suez Environnement; Raphael Schoentgen, Member of ENGIE Comex, Director of Research and Technologies of ENGIE and President of LABORELEC; and Andrea Watson, Head of Strategy and Implementation, Integrated Applications Center National Renewable Energy Laboratory (NREL) USA.

A last minute constraint did not allow H.E. Dr. Abdulkarim Mohamed, Minister of Foreign Affairs of the Comoros, to attend but Comoros confirmed its support in a move of continuous increasing support to the Alliance.

Discussion about partnership took place at the margins of COP21 with IEA, TerraWatt Alliance, countries like Malaysia or Iceland in particular. SER, HE Dr. Sultan Al Jaber and Ahmad Belhouli, the CEO of Masdar, stressed the importance of the Alliance initiative at the occasion of the high level day on Energy: Energizing the Future, on

December 6, in Paris at Palais Brongniart by SER, IRENA, REN21, the European Union and the UAE, as part of a series of events on REN.

At this occasion, Dr. Belhouli announced that the first steering committee of the Alliance would take place during Abu Dhabi Sustainability Week, at the World Future Energy Summit, in January 2016.

The Global Clean Water Desalination Alliance, H2O minus CO2 has been listed by The International Renewable Energy Agency (IRENA) as one of the major initiatives of the energy Action Day (<http://irenaneewsroom.org/2015/12/08/energy-day-at-cop21-unlocking-climate-solutions>). The French Ministry of Foreign Affairs also publicized the event (<http://www.diplomatie.gouv.fr/fr/politique-etrangere-de-la-france/climat/paris-2015-cop21/actualites-et-evenements-lies-a-paris-climat-2015/article/initiative-climat-sur-le-dessalement-propre-global-clean-water-desalinisation>), and a joint communique of IDA, Masdar, the French Government was released after the launch.

Next steps

Efforts to rally more governments are undergoing. Discussion with the World Bank and the TerraWatt initiative will be undertaken soon. Large energy producers such as EDF are about to join. Ways to collaborate with IRENA will be further explored. An invitation to participate in the first steering committee of the Alliance that will discuss the action plan for next year and the modalities and ways to implement it will be issued in the first quarter of 2016. We invite all present members of the Alliance to reach out to ensure even wider participation, in particular of international financial institutions, governments and utilities alongside with research institutions and laboratories.

The great success of this Initiative has laid the foundations for a coordinated effort of the international community to be able to provide water to humanity without increasing the carbon footprint: let's get to work! Please send us your thoughts about the work plan and your availability to contribute.

Innovators Strive to Meet Brine Reduction Challenge



Paul O'Callaghan, CEO BlueTech Research (above) and Michael Mickley, O2 Environmental Technology Assessment Group provide insights into brine reduction strategies.

The ever-expanding suite of brine concentrating technologies have only one thing in common – salt. Beyond that, the range of technologies is very diverse.

A mixture of physical, physical-chemical and chemical-based technologies are each at different stages of development and have a different fundamental underlying mechanism of operation. This is the challenge with benchmarking brine management technologies, as BlueTech has tried to do - each may have a slightly different operating envelope, in terms of the inlet and outlet, and also in terms of what they can tolerate and how much pretreatment is required.

BlueTech Research's recent Insight Report Brine Treatment Technologies and Zero Liquid Discharge, which identified unmet needs in the sector and attempts to benchmark technologies, sets out this lack of consistency.

Scope of Brine Disposal

Brine may include desalination concentrate, produced and flowback water, mine drainage water and industrial wastewater. Nearly all brines require disposal and, driven by regulatory pressures, treatment of brine is increasingly necessary to facilitate disposal and reclaim more product water.

Figure 1 depicts the conventional and most frequently used processing sequence for high-recovery of both lower salinity and higher salinity feedwater.

This sequence hits both CAPEX and OPEX, with energy costs contributing most to the OPEX. For lower salinity feedwater, reverse osmosis (RO) costs predominate, and for higher salinity feedwater the chief cost component is thermal evaporation. In the past decade, efforts to improve costs include alternative technologies and modification of existing ones.

Brine Disposal Market

The primary opportunities driving this development are in the oil and gas industry for treatment of waters from both conventional and unconventional sources. While there is not a mainstream market today in brine management, there is perhaps an inevitable market. The drivers include growing concerns regarding increased salinity in areas such as the Persian Gulf, environmental concerns

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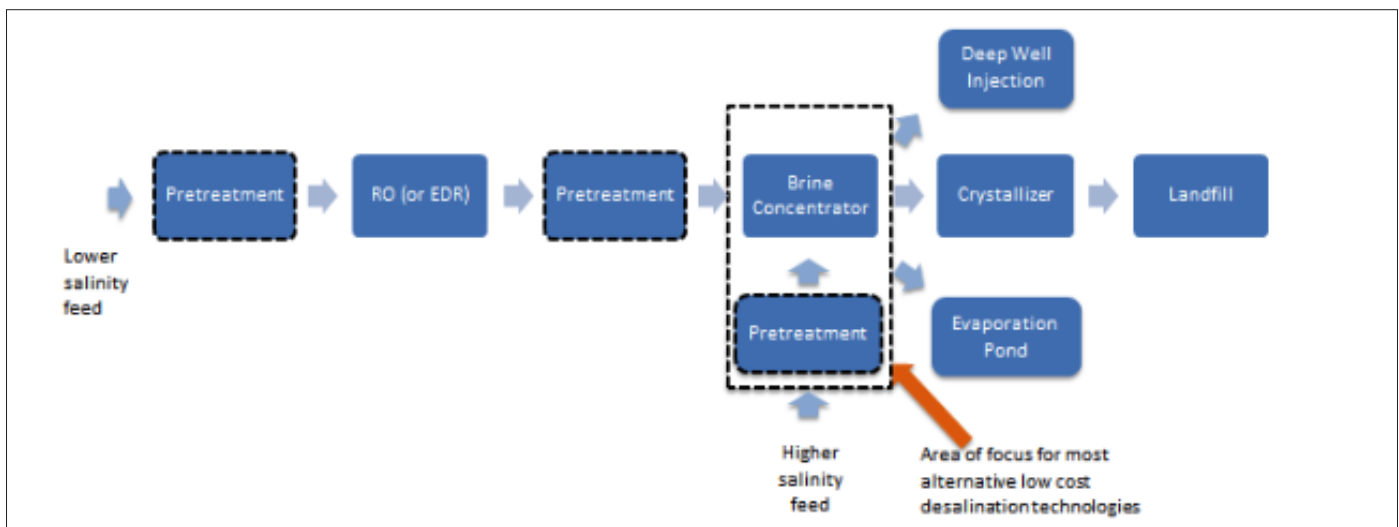


Figure 1. Conventional high-recovery processing sequence

Innovators Strive to Meet Brine Reduction Challenge

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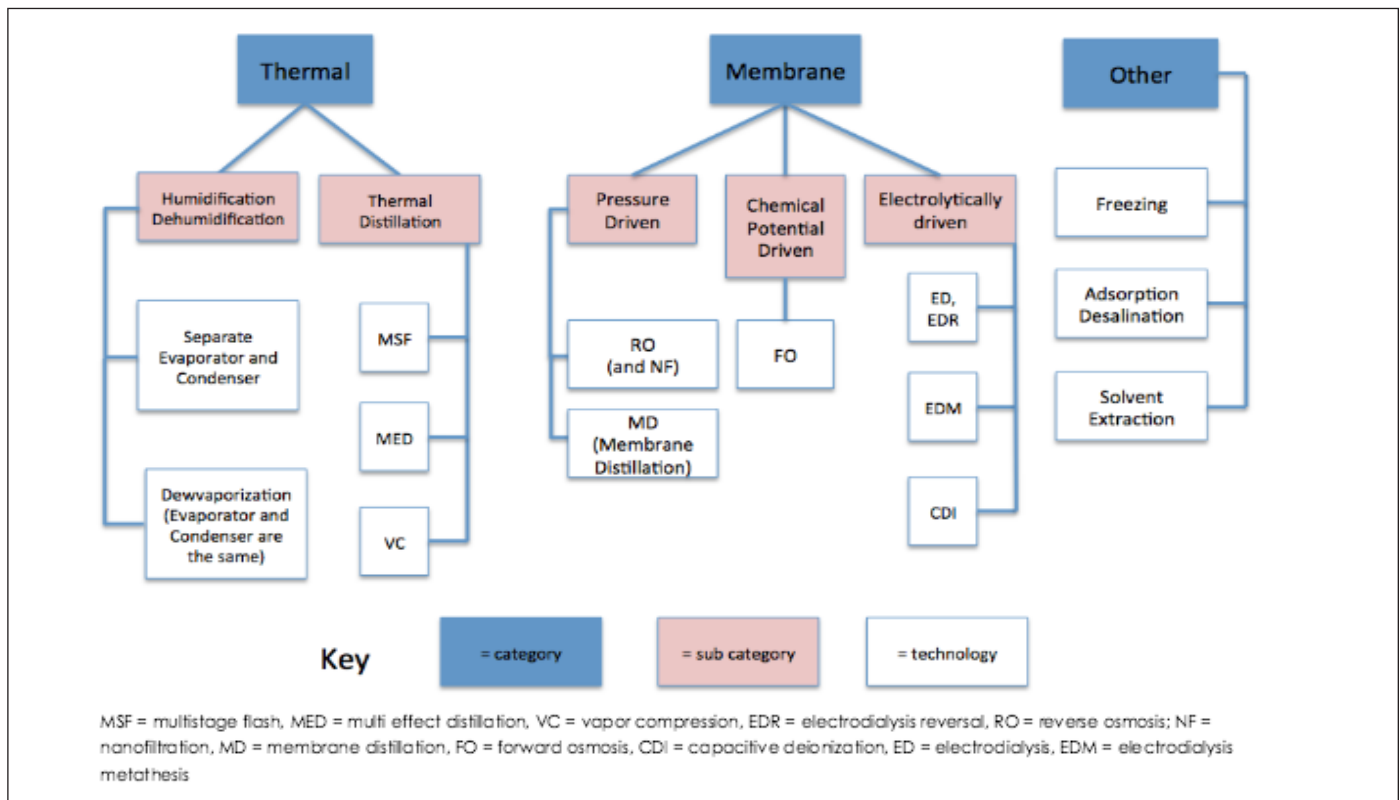


Figure 2. Categories of brine management technologies

on impacts on coastal ecology, and limited disposal options for industry and in inland areas.

Prime areas of interest are Zero Liquid Discharge (ZLD) and Minimum Liquid Discharge. ZLD has been the domain of companies such as GE, Aquatech, Veolia and Siemens. The dominant technologies have been brine evaporators and crystallizers.

A new crop of technologies is emerging based on approaches including forward osmosis, membrane distillation, liquid-liquid phase ion extraction, electro-separation and variations around humidification and dehumidification.

BlueTech’s research shows that most efforts have targeted alternatives to the conventional brine concentrator. Many have reached pilot testing, and a few companies have commercial products. Figure 2 lists brine management technologies, including several existing technologies such as MSF and MED, which are being modified:

MSF = multistage flash; MED = multi effect distillation; VC = vapor compression; RO = reverse osmosis; NF = nanofiltration; MD = membrane distillation; FO = forward osmosis; ED = electrodiagnosis; EDR = electrodiagnosis reversal; EDM = electrodiagnosis metathesis; RED = reversed electrodiagnosis; EDI = electrodeionization; CDI = capacitive deionization.

The focus on lower cost energy sources has led to many efforts highlighting the possible use of solar, geothermal and in particular, waste heat including low-grade heat. Cost reduction has also focused on improving heat transfer and system recovery: for example, from reduction in energy requirements and reducing performance limitations due to scaling and fouling.

The challenge with a benchmarking exercise for brine management such as BlueTech’s is that each of the technologies may have a slightly different operating envelope, in terms of the inlet and outlet, and also in terms of what they can tolerate and how much pretreatment is required.

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Raed A.I. Bashitialshaaer, PhD, Dr. Eng., Lund University in Sweden, is the recipient of IDA's 2014-15 Fellowship Award, which included an attachment with Oman's Public Authority for Electricity and Water (PAEW). His report follows.

IDA Fellowship Award Program (2014-2015)

The IDA Fellowship Award Program was designed to facilitate the advancement of global expertise in desalination and water reuse through the exchange of talents, knowledge and skills. As part of this award, I relocated to Oman for six weeks to participate in an attachment with the host agency, the Public Authority for Electricity and Water.

Host Agency in Oman

The Public Authority for Electricity and Water (PAEW) (www.paew.gov.om), located in Ruwi, Muscat, Sultanate of Oman, hosted the 2014-2015 Fellowship Program and the attachment that took place from October 10 – November 22, 2015. PAEW performs studies and explores and evaluates multiple techniques for providing fresh water and power production to various consumers; residential, industrial and commercial. Oman has several desalination plants, both small (smallest about 100 m³/d) and large size (largest about 200,000 m³/d). PAEW totally controls all plants below 10,000 m³/d but they also keep their eyes on the rest of the water production from large plants.

Desalinated Water Production

The Sultanate of Oman has been using desalinated water since 1976 in the Al-Ghubrah power and seawater desalination plant. That was the first commissioned plant located in Muscat, with a few thousand cubic meters a day. The total desalination capacity in 2008 was about 435,000 m³/day, while today's amount reaches

about 700,000 m³/day. Recently, the Omani government released two new contracts for Sohar and Barka with a total capacity with a little more than 500,000 m³/day. This will increase Oman's total production to more than one million cubic meters a day.

Six Weeks in Brief

Mr. Sultan Al-Zaidi provided a very interesting introduction about PAEW, their work and responsibilities in all divisions such as Policy, Strategy and Health, Safety and Environment, the HSE division, planning and assets, projects and operations. As planned, I spent one week in each division.

We started with meeting division heads and engineers at different levels following the pre-planned program. I listened to them about their duties, work experiences and the problems they were facing, and then described all my experiences through lectures and also individual discussions every day. Weekly planning for visits was done separately with each division to be able to see most of the plants during and after operation.

The visit was very successful because of the arrangement between the planning and asset division and the plant manager. Also, the workers at the Ghubrah seawater desalination plant were very kind. Their deep understanding of their work and preparedness towards work and safety became especially clear through their explanations and communications.

Another visit was arranged for Al-kuwiyama RO desalination plant, where they were experiencing some issues with water intake pipes, located in South Sharqiah about 400 km from the PAEW building. This plant is functioning with reverse osmosis in two different sections of total production of about 400 m³/day. Of this, 100 m³/day is produced from brackish water (TDS about 7000 mg/l) that comes from three wells and 300 m³/day is seawater (TDS more than 50,000 mg/l) taken directly from the sea.

The smaller capacity section functions well, just taking their input from two wells. However, the RO plant with capacity of 300 m³/day has been totally out of service since about a year ago. Thus, it is a serious problem for

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IDA Fellowship Award Report

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the people living in the area, having started one year ago with no change and increasing demand. In this part, we listened carefully to the engineers, helping them with a solution by sending this problem to the right department at the PAEW.

The last visit was arranged for the Barka desalination and power plant also with Mr. Sultan, because this plant does not belong to the PAEW, though its production goes to the government under their control. The plant is located at the Gulf of Oman, functioning and operated by ACWA Power, and some operational duties are given to the First National Company for Operations and Maintenance Services (NOMAC) Oman 'Power, Water and Innovation' as a subcontractor. Barka MSF was built in 2003 as the first part of the Barka desalination plant, with a capacity of about 91,000 m³/day and it produces about 427 MW. Barka has two new expansions, SWRO

plants that are called RO1 and RO2, at the same place with total capacity of about 100,000 m³/day.

It was a great honor that the International Desalination Association selected me for the Fellowship Award, and I would also like to acknowledge both IDA and PAEW for their great efforts and the opportunities that were given to me through this award program. The program was designed to facilitate the advancement of global expertise in desalination and water reuse through the exchange of knowledge and skills. It is now considered to be one of the industry's most prestigious awards, recognizing individuals who have demonstrated exceptional professional achievements. This program was good opportunity for me and the host agency to exchange our experiences in all directions in the desalination industry, and the host agency also benefitted from my own knowledge.



Al Ghubrah seawater reverse osmosis desalination plant



An overview of Al-Kuwiama RO desalination plant



Treatment point for pH and chlorination



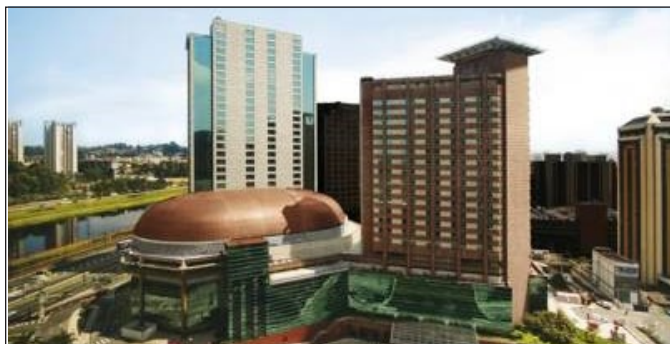
Surface flow (overland flow similar to evaporation pond)

IDA Announces Venue for 2017 IDA World Congress on Desalination in São Paulo

The Sheraton World Trade Center in São Paulo, Brazil has been selected as the venue for the 2017 IDA World Congress on October 16-20, 2017. A vibrant São Paulo is among the world's most populous cities and is Brazil's financial center, featuring an abundance of cultural institutions and a rich architectural tradition.

Miguel Angel Sanz, Director of Strategic Development, Suez Environnement, is the Chair of the Technical Program. Technical Program Committee members include Guillaume Clairet, Chief Operating Officer, H2O Innovation; Juan Miguel Pinto, Sales Manager Desalination for Americas, Energy Recovery Inc.; and Renato Ramos, Latin America Commercial Leader and Regional Marketing Manager, at Dow Water & Process Solutions.

Detailed information about the Technical Program, Exhibition and activities of this premier event will be available soon. Also coming soon will be information about an exciting roster of sponsorship opportunities including events and branding opportunities.



The Sheraton World Trade Center in São Paulo, Brazil



São Paulo, Brazil

Please visit the IDA website on a regular basis for updated information. To contact IDA with questions regarding the 2017 World Congress, please email us at conferences@idadesal.org.

Watch WaterWorld's Desalinate Bi-Weekly Newscast for Latest Industry News



Be sure to check out the 2016 Desalinate news video broadcasts hosted by Tom Freyberg of WaterWorld, IDA's media partner regarding desalination news.

All Desalinate news broadcasts can be found at idadesal.org/multimedia/video/2016-videos/

Site Selection Bids for IDA World Congress 2019 Open on April 15

IDA welcomes formal bids to host the 2019 World Congress starting April 15, 2016 and running through September 15, 2016. Held every two years, the IDA World Congress is widely regarded as the premier event for the global desalination and water reuse community. It is attended by delegates from the public and private sector – world leaders in all sectors of the desalination and water reuse, typically representing more than 60 countries.

To reflect the World Congress's global reach, IDA has designated five global regions for the purpose of the site selection process: Europe, Latin America/the Caribbean, the Middle East and Africa, North America, and Pacific and Asia.

Destination considerations are based on a variety of criteria including country site inspections, invitation and support by governments and/or IDA's regional affiliates,

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in addition to interest in desalination and water reuse. After review and scoring by the IDA Site Selection Committee, a host candidate will be recommended to the IDA Board for final selection in April 2017.

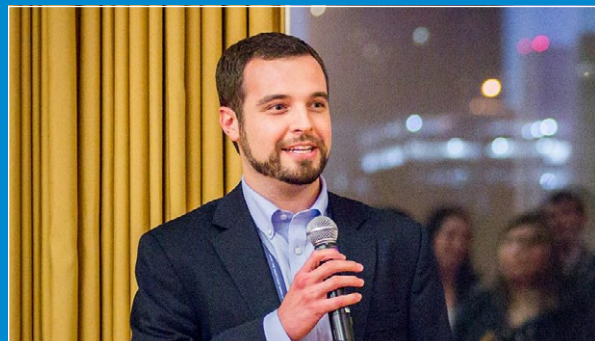
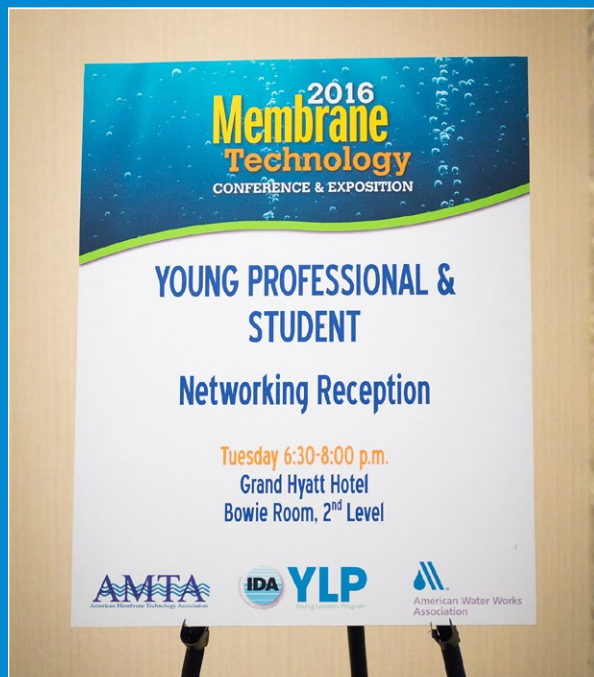
The site for the 2019 World Congress will join an impressive roster of locations around the world to host the event. The 2017 IDA World Congress will take place in São Paulo, Brazil. The 2015 event was held in San Diego, California with attendance surpassing 1,700 with del-

egates from 63 countries. Attendance at the 2013 IDA World Congress in Tianjin, China exceeded 2,000. Other recent locations have included Dubai, UAE; Maspalomas, Gran Canarias; Singapore; and Perth, Western Australia.

To obtain more information on the 2019 site selection criteria and bid proposal requirements, please contact Leslie Merrill at lmerrill@idadesal.org.

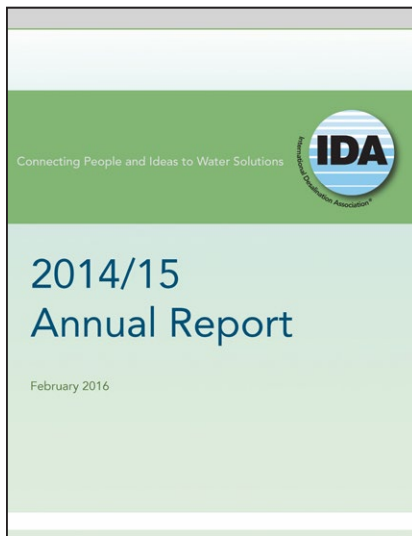
Young Leaders Host Networking Reception at Membrane Technology Conference

The Young Professionals Reception at the 2016 AWWA/AMTA Membrane Technology Conference was a great success with more than 40 attendees. Thank you to the Committee and volunteers for organizing and managing the event that has drawn many positive comments.



Photos courtesy of Ashley Waldron Photography.

IDA Publishes Inaugural Annual Report



IDA has published its first Annual Report covering activities for the year ending December 31, 2015. Available to IDA members only, the report is an overview of membership and financial information, strategic plan goals and objectives, IDA's key events, and also includes updates on

education, training and development, and marketing and business development efforts. The report will be distributed to all members via email and will be available on the IDA website.

Below are just a few of the activities discussed in the Annual Report.

2015 IDA World Congress in San Diego, California

The theme of this highly successful World Congress was "Renewable Water Resources to Meet Global Needs", and the event presented the perfect platform to deepen understanding and to discover, explore and embrace advances in desalination and water reuse. Attendance at the 2015 IDA World Congress surpassed 1,700 with delegates from 63 countries representing Europe, the Middle East, North America, Asia, and such countries as Russia, Ukraine, South Africa, Côte D'Ivoire, Chile and Argentina. A record 470 abstracts were submitted for the Technical Program. The final program comprised 301 total presentations (157 podium presentations and 144 digital poster presentations) and 24 sessions, each with two or three co-chairs. Nine interactive panel discussions added a popular new dimension to the Technical Program. The 11,000 square meter Exhibition featured 115 companies from 20 countries as well as an Innovation Theater to showcase new technologies and services.

Specialty Technical Conferences

IDA hosted two highly successful specialty technical conferences in 2015. A conference in Rio de Janeiro, the first IDA event ever held in Latin America, focused on water reuse and desalination development in the region, and a humanitarian conference in Portofino, Italy focused on social responsibility and how it will be possible to design sustainable water solutions for tomorrow's generations.

Upcoming Events

The Annual Report also noted two important upcoming events. In 2015, IDA announced it would hold its first International Water Reuse Conference in Nice, France on September 25-27, 2016. IDA also announced that São Paulo, Brazil, would be the site of the 2017 IDA World Congress and would take place October 16-20 at the São Paulo World Trade Centre, Brazil. Please be sure to check the IDA website for updates and more information.

Marketing and Business Development

IDA continues its efforts to broadcast news and information through publications, e-mail alerts, bulletins, public relations and social media – channels that will help it create greater awareness of IDA's unique role as the point of connection for the global desalination and water reuse industry and reach new audiences around the world.

Media relations is an important aspect of conveying IDA's role as the leading global association dedicated to desalination and water reuse. It is also a critical channel in promoting advancements in desalination technologies as well as advocating for the appropriate use of desalination and water reuse around the world. In 2015, IDA took advantage of the IDA World Congress to talk about desalination and reuse with media on a global stage.

In 2014/2015, IDA developed a presence on three major social media platforms: LinkedIn, Facebook and Twitter. Additionally, we are also active on YouTube and Google Plus.

IDA will continue to enhance its efforts in marketing and business development and is working with outside institutions such as Heriot-Watt University, David H. Paul, Inc.

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and its Affiliates to cross-market more heavily through these platforms.

Education, Training and Development

The IDA Annual Report addresses several initiatives including IDA's Young Leadership Program, IDA Desalination Academy, the IDA Fellowship Award and IDA's Channabasappa Memorial Scholarship Trust.

IDA Pioneer Chronicles Preserve Desalination History through Video Interviews



Thanks to the generosity of Faith Leitner, daughter of desalination industry pioneer Gordon Leitner, IDA has produced the first chapter in its "Pioneer Chronicles" video series. They are now available for viewing at <https://goo.gl/OSropQ>

Faith funded the first installment of the "pioneer" project to preserve a valuable part of the desalination industry's history in honor of her father, one of the most respected and widely known figures in his field.

The first chapter of the Chronicles – originally named "Conversations with Pioneers" – took shape at the 2015 IDA World Congress where a series of interviews with 13 distinguished veteran desalters was filmed. WDR editor Tom Pankratz conducted the interviews, which included discussions about the development and commercialization of desalination technologies from 1960 through 1980, with an emphasis on thermal desalination. Inter-

viewees were asked how they became involved in the industry, and what anecdotes they could provide about the companies, projects and people with whom they worked.

IDA plans to continue the series through interviews with pioneers in membrane technologies.

Connect with IDA on Social Media



Looking to stay connected to IDA and news about desalination and water reuse? Along with using traditional channels of communication, IDA is now active on five social media channels including LinkedIn, Facebook and Twitter, You Tube and Google Plus.

We invite you to connect with us on social media, share our posts and invite your colleagues to join in the conversation. New media gives IDA dynamic new platforms to share news and information and stay in touch with our constituents.

IDA will continue to enhance its efforts in this area and is working with outside institutions such as Heriot-Watt University, David H. Paul, Inc. and its Affiliates to cross market more heavily through these platforms.

IDA Exploring Options for the Journal of Desalination and Water Reuse

The last issue of the IDA Journal of Desalination and Water Reuse is now online. IDA is exploring a variety of options that will enable IDA members to continue to access high quality articles about important developments in desalination and reuse. Archived issues of the Journal will be available on the IDA website at no cost to members.

To access the Journal, go to the member login at ida.enoah.com/Log-In. Once you are logged into your profile, click on the IDA Journal under the Publications Tab.

Call for Papers Now Open for IDA's International Water Reuse and Recycling Conference

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The Program

Program Plenary sessions focus on Global Water Reuse Advances and Success Stories and Key to Success of Water Reuse and Vision for the Future. Panels will explore "Regulation, Funding and Public Acceptance of Water Reuse: Lessons Learned Worldwide" and the "Role of Water Reuse in Solving the Water-Energy and Food Nexus."

Program chairpersons are IDA Directors Leon Awerbuch and Nikolay Voutchkov. The award-winning team brings more than 65 years of experience in the field of desalination and water reuse and have published over 120 technical papers.

Committee members include Michel Canet, France; Guillaume Clairet, Canada; Doug Eisberg, USA; Ghasan Ejeh, Belgium; IDA President Dr. Emilio Gabbrielli,

Brazil; Christopher Gasson, UK; Fady Juez, UAE; Valentina Lazarova, France; Dr. Boris Liberman, Israel; IDA First Vice President Shannon McCarthy, Italy; Maurice Neo, Singapore; Miguel Angel Sanz, France; Devesh Sharma, USA; Dr. Corrado Sommariva, UAE; and Udi Tirosh, Israel.

Sponsorships

Sponsorships are now available. IDA invites you to explore the exceptional opportunity to promote your brand and increase visibility among leaders in the global water reuse industry. Visit <http://idadesal.org/water-reuse-conference/sponsorship-opportunities/> to learn more.

Conference Information

Please visit the IDA website for complete information about the conference: idadesal.org/water-reuse-conference/

Innovators Strive to Meet Brine Reduction Challenge

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Newer applications, including those in the oil and gas industry, frequently involve more complex waters than in other applications. This has resulted in the need for both improved pretreatment processes and more robust desalination processes.

The industrial players, including oil and gas companies, power companies, anyone with cooling tower blow-down or boiler water concentrate, are keeping a lookout for solutions that help provide cost-effective disposal options, while the larger water technology industry players should be watching very closely as the different technologies start to prove themselves in demonstration-scale applications. One major research project currently under

way in the UAE at Masdar has pitted four different pilot desalination plants against each other, all powered by renewable energy.

Michael Mickley, a member of O2 Environmental Technology Assessment Group and an internationally recognized expert on concentrate/brine management, will host a roundtable briefing at BlueTech Forum 2016 on June 1. This session - Brine management: the competitive landscape and next generation technologies - will begin with a primer based on the recent BlueTech Insight Report. The Forum will be chaired by Paul O'Callaghan, CEO and founder of BlueTech Research. For more information, visit www.BlueTechForum.com

InDA-APDA Conference 2016 at Chennai (India)



Dr Emilio Gabbrielli, IDA President, addresses the participants during the inaugural session of the InDA-APDA Conference at Chennai, India

Founded in 1991, InDA celebrates its silver jubilee in 2016. InDA is an Association Affiliate of the International Desalination Association (IDA) and an affiliate of Asia Pacific Desalination Association (APDA). It has about 450 Life and Corporate members.

Several programs have been held and planned during the year. It started with the impressive InDA Workshop at DJ Sanghvi College in Mumbai on October 10, 2015 in the western part of India. InDA Congress (InDA-CON-2016) was held in Andhra University (AU) College of Engineering, Vishakhapatnam in the eastern part of India coinciding with the Diamond Jubilee celebration of AU College of Engineering during January 29-31, 2016.

The InDA-APDA Conference was held February 11-12, 2016 at Chennai in the southern part of India followed by a site visit on February 13 to mark the Silver Jubilee of the formation of InDA. The theme of the conference was "Clean India Technologies: Role of Desalination & Water Purification". During the inaugural session of the InDA-APDA Conference, Dr. P.K. Tewari, President of InDA, welcomed the Chief Guest Dr. R.K. Sinha Homi Bhabha, Chair Professor & Former Secretary Department of Atomic Energy; Dr. Emilio Gabbrielli, President of International Desalination Association; Dr Masaru Kurihara, President of APDA; Mr. Rajneesh Chopra, Global Head - Business Development, WA-TECH; and members of Board of Directors of IDA and APDA as well as invitees and participants.

Dr. Gabbrielli presented Dr. Tewari President with a commemorative plaque on the occasion of InDA's silver jubilee. The kind gesture of IDA in general and IDA's President in particular was very much appreciated by one and all.

Dr. Gabbrielli and Dr. Kurihara delivered the Plenary Lectures on "Desalination: Past, Present & Future" and "Innovative Desalination Technology including Mega-ton Water System" respectively, setting the platform for technical debate on challenges, issues and possible solutions.

The topics covered during the conference included state-of-the-art reviews and case studies on desalination and water purification technologies and non-conventional energy-based as well as nuclear desalination processes. A special session was devoted to "Make in India – Challenges and Opportunities" to encourage indigenous production of desalination systems and their components. The conference was attended by more than 150 delegates and members of APDA and IDA.



Release of souvenir during the inaugural session of InDA-APDA Conference

The valedictory session was jointly chaired by Dr. Gabbrielli and Dr. C. Muthamizhselvan, Director (E&T), SRM University (Chennai). They presented "Make in India" and "Innovation" awards, instituted by InDA (South Zone) and gave away the prizes for best papers and toppers of the desalination course conducted by InDA (South Zone) at SRM University.

There is need for indigenization to address the local challenges. The Department of Atomic Energy (DAE) in India has developed several water technologies for enhancing water availability and improving water quality. It is estimated that the total water market in the country is about 14 billion US\$ including a 4 billion US\$ wastewater market, and 0.7 billion US\$ decentralized water market with a potential of a 7 billion US\$ decentralized market for domestic units considering rural and remote areas.

There are opportunities and challenges, particularly from the point of view of affordability and sustainability. There is a market for multi-nationals and an opportunity for indigenization. There is also an opportunity for working jointly for

“Make in India,” which will help in adding value and enhancing employment potential.

In this context, the InDA-APDA Conference – with the support from EA-Water, with the theme “Clean India Technologies: Role of Desalination and Water Purification” bringing together all the stakeholders from industry, academia, R&D Centers, user groups, Government Agencies and students – has played an important role.

Speakers oriented their presentations to address the challenges, solutions and recommendations on water issues. The audience actively participated in the discussions. It is planned to send the recommendations of the conference to the Government.

The major challenges are that a significant population lives in rural areas and remote locations. There is a need for technology innovations that are simple, affordable, repairable by local technicians, and sustainable in a rural context.

Achievements of scientists and engineers addressing the unique challenges are yet to adequately percolate down to

the bottom of the pyramid. The potential to impact the common man's life is yet to be fully exploited, particularly in remote areas. Safe drinking water is required by all – resource-rich users as well as resource-poor users. One of the ultimate missions of InDA is to act as a facilitator in development of affordable, accessible and acceptable water technologies so that the benefits of the technology reach the bottom of the pyramid in a sustainable manner.



Informal view of InDA-APDA Conference

AFFILIATE SPOTLIGHT

Indian Desalination Association

An IDA Association Affiliate since its founding 25 years ago, the Indian Desalination Association (InDA) has endeavored tirelessly to encourage the development and promotion of the appropriate use of desalination and desalination technologies nationwide in water supply, water reuse, water pollution control, water purification, water treatment, and other water sciences and technologies and various solute-solvent separations.

One of IDA's 16 affiliates, InDA's main goal is to foster the development and promotion of the appropriate use of desalination and desalination technologies nationwide. InDA was originally established as an affiliate of IDA to bring in awareness about desalination by dissemination of knowledge and encouraging the adoption of desalination technologies. Its goals have expanded to address the entire gamut of issues associated with Integrated Water Management encompass-

ing water conservation, water recycling, water management, water use efficiency besides desalination.

InDA provides an interface for the interaction of people associated with various aspects of desalination and water treatment ranging from policy makers, users, suppliers of plants and equipment and research and development through their annual conferences and workshop.

IDA was proud to present an award to the Indian Desalination Association (InDA) on the occasion of its Silver Jubilee.

We congratulate Dr. P.K.Tewari, President of InDA, and his entire team at InDA for its Silver Jubilee.



Calendar of Events

February 29 – March 2, 2016

WEX Global 2016

Lisbon, Portugal

iwsabudhabi.com/portal/about-iws/overview.aspx

April 19-20, 2016

Global Water Summit 2016

Abu Dhabi, UAE

www.watermeetsmoney.com

May 10-12, 2016

Ozwater 2016

Melbourne, Australia

www.ozwater.org

May 22-26, 2016

Desalination for the Environment, Clean Water and Energy

Rome, Italy

www.edsoc.com

May 31-June 3, 2016

CaribDA 2016 Biennial Conference & Exposition

Trinidad

www.caribda.com/calendar

July 10-14, 2016

Singapore International Water Week

Singapore

www.siww.com.sg

September 25-27, 2016

IDA International Conference on Water Reuse and Recycling: Turning Vision into Reality

Nice, France

idadesal.org/water-reuse-conference

October 4-6, 2016

WETEX 2016

Dubai, UAE

www.wetex.ae/about/ChairmanMessage

October 5-7, 2016

DESAL 2016 5th Latin American Congress on Desalination and Water Reuse

Santiago, Chile

gecamin.com/desal/english/?utm_source=mailing_1943&utm_medium=email&utm_campaign=desal-2016-first-announcement-and-call-for-abstracts

October 9-14, 2016

IWA World Water Congress

Brisbane, Queensland, Australia

www.iwa-network.org/event/world-water-congress-exhibition-2016

October 19-21, 2016

XI International Congress Desalination and Water Reuse, AEDyR

Valencia, Spain

www.aedyr.com

November 6-9, 2016

Membranes in Drinking and Industrial Water Production

Leeuwarden, The Netherlands

www.edsoc.com

October 16-20, 2017

2017 IDA World Congress

São Paulo, Brazil

www.idadesal.org

May 6-10, 2018

Desalination for the Environment, Clean Water and Energy

Nantes, France

www.edsoc.com

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