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DEPARTMENT OF ENERGY

IDRA
Desalination and Reuse®

WORLD CONGRESS

Addressing Water Scarcity

8 - 12 December 2024 | Abu Dhabi, UAE

Call for Extended Abstracts

Extended Abstract Submission Deadline

February 15th, 2024

INVITATION

The flagship International Desalination and Reuse Association event returns to Abu Dhabi a decade after the 2024 IDRA World Congress. The World Congress will take place during the week of December 8-12, 2024, in the dynamic city of Abu Dhabi, UAE, at the Abu Dhabi International Exhibition Center (ADNEC), a spectacular location and state-of-the-art facility.

The 2024 IDRA World Congress is hosted by the Abu Dhabi Department of Energy – with support from the Abu Dhabi Environment Agency, the Abu Dhabi National Exhibition Centre, the Department of Culture and Tourism, the Department of Economic Development Office of the Undersecretary of the Department, Support Services Sector, Corporate Media and Media Identity Department, Internal Audit Office, and Office of Legal Affairs. The 2024 IDRA World Congress and exhibition will provide knowledge-sharing and interaction opportunities for participants on a plethora of both technical and business topics related to the use of desalination and water reuse solutions to ensure a secure water future.

Our world faces challenges in providing adequate and safe water supplies for our populations and industries. Desalination and Water Reuse plays a key role in providing a sustainable and reliable source of water to meet current and future clean water needs, and its importance is increasing as new technologies emerge and freshwater shortages multiply.

The theme of the 2024 IDRA World Congress is Addressing Water Scarcity. We need to chart progress toward resilient processes, technologies, and communities to secure a sustainable future. Desalination and Water Reuse provide resilient solutions to efficiently meet the growing water demand, threats to water security, and the increasing frequency and severity of droughts resulting from climate change. Despite progress towards the UN Sustainable Development Goal #6, Water and Sanitation for All, billions of people still lack access to safe and clean water, sanitation and handwashing facilities, and clean water for agriculture is under threat.

We encourage and invite you to submit an extended abstract to be considered for inclusion in the IDRA's 20th Biennial World Congress Technical Program, culminating in the year of the fiftieth anniversary of the IDRA.

PROGRAM

The World Congress agenda will span four days, featuring four tracks of full-day parallel technical sessions, high-level plenary sessions, a Leaders Summit, Hackathon, Datathon, engaging business discussions, IDRA Academy Courses, dynamic Plant Tours, an enchanting Welcome Reception, a memorable Gala Dinner, and an inspiring Awards Ceremony.

The Congress Technical Program Committee is led by one esteemed member of the IDRA Board of Directors and two distinguished experts from the Abu Dhabi Department of Energy, who will serve as the Technical Program Committee Co-Chairs. Together, they are assembling a dynamic technical committee comprising members from diverse areas of expertise from across the globe.

2024 IDRA WORLD CONGRESS TECHNICAL PROGRAM COMMITTEE CO-CHAIRS:

MRS. JANTJE JOHNSON
CEO and Founder,
OrangeBoat,
United States

DR. SHAMMA AL MALEK
Strategy Development Director at the Abu Dhabi Department of Energy,
United Arab Emirates

ENG. JAMAL FAHMI SHADID
Policy Development Director at the Abu Dhabi Department of Energy,
United Arab Emirates

TOPIC CHAIRS:

DR. MARSHALL DAVERT
Executive Vice President, Global Major Pursuits Director, Stantec

DR. YVAN TREAL
Development Director, SUEZ International

MR. ZAEL SANZ
Senior Water and Sanitation Specialist, World Bank

MR. THOMAS ALTMANN
EVP - Innovation and New Technology, ACWA Power

MR. ADRIAN SYM
Chief Executive, Alliance for Water Stewardship (AWS)

DR. HOON HYUNG
President, LG Water Solutions

SESSION CHAIRS:

MS. SOPHIE BERTRAND
Strategic Development Deputy Director, SUEZ

DR. VERONIQUE BONNELYE
Technical Support Manager, SUEZ International

MR. OSCAR CALLES
Manager, Desalination and Process, TAQA

DR. ANTONIO CASAÑAS
Senior Account Manager, DuPont Water Solutions

DR. ANTONELLA DE LUCA
Head of Competence Center Environmental Solutions, Omya International AG

DR. MARK DENT
Regional Manager, Alliance for Water Stewardship

DR. MIKE DIXON
CEO, Synauta

MR. DOUG EISBERG
VP of Sales, Avista Technologies

DR. HEIKE GLADE
Senior Researcher, University of Bremen

DR. JENNY LAWLER
Senior Research Director, Qatar Environment and Energy Research Insititute, Water Center

MR. ROBERTO MAGNANO
Managing Director, ILF Consulting Engineers

MR. NAOLL MARY
Water Security and Climate Resilient Infrastructure, IFC - International Finance Corporation

DR. VICTOR MONSALVO
Head of Eco-efficiency Area – Innovation and Technology Department, FCC Aqualia

DR. TARIQ NADA
Vice President Water Business, ACWA Power

MRS. DELIA PASTORELLI
Desalination Technical Manager, SUEZ

MR. YVAN POUSSADE
Senior Technical Expert, Veolia

MR. KEVIN PRICE
Principal, AWTT, LLC

MRS. OLGA SALLANGOS
Dhekelia Desalination Plant Manager, Caramondani Desalination Plant LTD

MR. MIGUEL ANGEL SANZ
President, MS Water Consult

MRS. CONSTANZE SIMMERMACHER
Portfolio Manager Water Treatment Plants Singapore / Process Engineering Lead, Jacobs

MR. LARS SPAETH
General Manager, Passavant -Geiger Aqseptance Group

MRS. MARIE-LAURE THIELEN
Ingenieur Specialist, Laborlec NV /Engie

MR. NIKOLAY VOUTCHKOV
Executive Director, NEOM Research Institute

SUBMISSION

We are seeking original work on a wide variety of topics. Extended Abstract submissions will be accepted until February 15, 2024, through the online Paper Management System accessible on the wc.idadesal.org website. Authors must create an online profile and submit their extended abstract using the IDRA template found in the online system.

Extended Abstracts are evaluated based on contribution and impact, originality, accuracy, quality of presentation, and an appropriate comparison to related works. The submission must include the paper's purpose, new results, and conclusions, if available.

WHAT YOU NEED TO KNOW

- As English is the official language of the World Congress, papers should be submitted in English.
- No previously published or presented material will be accepted. This will be strictly monitored.
- Detailed information for submission of your abstract and participation requirements can be found here.
- Session Co-chairs will review all draft manuscripts for originality, the importance of findings, and relevance to the theme of the World Congress.
- Information collected from those accepted into the program will be used for marketing and promotional purposes such as online announcements, social media, print material, the Final Program, and Proceedings.
- The authors of papers for presentation in the Congress will be expected to sign a participation agreement of requirements and are required to submit a complete manuscript and PowerPoint presentation.
- All accepted podium oral and digital poster presenters must register and pay Congress registration fees once they receive the acceptance letter.

Please direct all inquiries regarding the Technical Program to papers@idadesal.org. The email subject line should state "2024 IDRA World Congress".

SCHEDULE

15 FEBRUARY 2024

Deadline: Extended Abstract Submission

15 MARCH 2024

Acceptance: Notification to Authors

15 MAY 2024

Deadline: First draft Manuscripts Submission

15 JUNE 2024

Deadline: Presenter Registration, Photo and Bio Submissions, Final Manuscript and Copyright Agreement

15 AUGUST 2024

Available: Advance Program

15 SEPTEMBER 2024

Deadline: First Draft PowerPoint Presentations

30 OCTOBER 2024

Deadline: Final PowerPoint Presentation

8 DECEMBER 2024

Available Final Program

TOPICS

The IDRA seeks the best quality papers to solidify current industry knowledge and challenge existing assumptions to advance growth in our industry. We are interested in hearing success stories and case studies where serious issues were experienced and solved. Sharing knowledge helps us to improve technology and our industry. We encourage submissions focused on practical operations directly from plant operators—likewise, cutting-edge research aimed to enhance the economics of non-conventional water resource solutions dramatically.

We encourage authors to take the time to plan their papers carefully, write with clarity, and deliver practiced, clear, and well-communicated presentations that strictly run within the allotted time so that all authors have the same opportunity to present their ideas. Each topic area below is explained with examples, and we encourage authors to think broadly.

Technical Program Themes and Sub-themes (case studies are encouraged):

ADDRESSING WATER SCARCITY THEME OVERVIEW:

- Water-Energy-Food-Research-Climate Nexus
- Adaptation and Mitigation to ensure clean water

THE AIM IS TO DEVELOP AN OVERALL TECHNICAL PROGRAM THAT WILL ADDRESS NEEDS-DRIVEN TECHNICAL SOLUTIONS TO ENSURE:

- Water for Agriculture
- Water for drinking and municipal needs
- Water for industry

TECHNICAL PROGRAM PILLARS/TOPICS:

- Alternative Sources of Water: Desal and Reuse
- Alternative sources of energy
- Corporate and Social Responsibility (SDG #6, #7, #12)
- Innovation and A.I. development supported by needs-based research.

The IDRA is seeking extended abstract submissions under the following ten topics:

1. **DESALINATION AND REUSE: REGULATIONS**
2. **DESALINATION AND REUSE: INNOVATION AND EMERGING TECHNOLOGIES**
3. **DESALINATION AND REUSE: PPP AND FINANCE**
4. **DESALINATION AND REUSE: ENERGY**
5. **DESALINATION AND REUSE: CLIMATE ADAPTATION**
6. **DESALINATION AND REUSE: SUSTAINABILITY AND ENVIRONMENTAL RESPONSIBILITY**
7. **DESALINATION AND REUSE: NET ZERO AND A CIRCULAR WATER ECONOMY**
8. **DESALINATION AND REUSE: IRRIGATION AND FOOD SECURITY**
9. **DESALINATION AND REUSE: SOCIAL RESPONSIBILITY**
10. **LESSONS LEARNED IN DESALINATION AND REUSE**

1. DESALINATION AND REUSE: REGULATIONS

Topic Chair: Dr. Marshall Davert, Executive VP, Global Major Pursuits Director, Stantec

Regulations significantly impact the planning, design, and operation of any water treatment/distribution system. In addition, it also requires existing systems to implement modifications to meet new requirements.

We welcome abstracts on the impact of regulations for the topics listed below.

- Water Quality Monitoring and Health: Addressing PFAS/PFOS, Microplastics, and pollutants.
- Water Reuse Direct Potable Water Reuse and In-direct Potable Water Reuse
- Intake and Outfall Systems
- Distribution Network and Systems
- Smart Infrastructure
- Water Usage Optimization
- Promoting and ensuring the balance between decarbonization and security of supply

2. DESALINATION AND REUSE: INNOVATION AND EMERGING TECHNOLOGIES

Topic Chair: Dr. Yvan Treal, Development Director, SUEZ International

Innovation is essential to meet the ever-moving goalposts of water security and sustainability.
Innovation can be a novel and/or emerging technology but it can also be the optimization of an existing technology and/or process-system.

We are interested in receiving papers and case studies on topics such as:

- Reaching the Lowest Cost Desalination and/or reuse plants
- Material Selection for Robust Systems
- From Ideas to Commercialization: limitations, successes and failures
- Bioengineering
- Membrane Science
- Zombies
- Zero Liquid Discharge
- Transforming Brine into a product and/or brine reuse
- Machine Learning, Artificial Intelligence, Big Data, Digital Twins
- Benchmarking and Data Ontology
- Data-driven Decision Support
- Cybersecurity in Water
- Engineering Optimization in the Design and Process of Seawater and Brackish Desalination and Water Reuse Plants

3. DESALINATION AND REUSE: PPP AND FINANCE

Topic Chair: Mr. Zael Sanz, Senior Water and Sanitation Specialist, World Bank

Financial impact on water cost and project viability is relevant to address the actual macroeconomic situation that could jeopardize the global clean water availability challenge.

The innovation in financing structures and coverages is relevant to achieving project development even in adverse scenarios. The adaptation capacity of these solutions will open new investment opportunities.

We look for papers and case studies related to topics such as:

- New Creative Financing Structures to Optimize Water Cost
- ESG Financing, Green Bonds
- Innovations on Securities and Guarantees
- Government Support to manage Water Costs, New Tax Structures, Grants…
- Carbon Negative Finance Incentives to Leverage Water Cost Reduction
- Project Delivery Models for Big-Desal

- Big Data for Financing Models
- Long-term Successes with Project Models and Financing
- Desalination Price Challenges and Realities
- Water Price, Inflation, Wars, Conflicts, Interest Rates Increase and their impact on water availability
- Financing Adaptation to Particular Conditions to a Project Location

4. DESALINATION AND REUSE: ENERGY

Energy use in desalination and reuse continues to be a fast-changing area in both how it is produced, and consumed, as well as how it is managed. This is especially true around the world in municipal, industrial, and agricultural applications. We are looking for case studies that show the use of renewable energy including solar, wind, wave, gravity, salinity gradients, etc. In particular, we are looking for case studies of how mega plants are continuing to increase sustainability and at the same time driving down capital and operational costs in relation to energy and the CO2 footprint. We are also interested in the smaller scale applications using renewable energy and innovative energy management, especially research programs leading the way for greater resilience, sustainability, and security. For a totally new area, a couple of papers on atmospheric water harvesting and its implications are encouraged. The smaller-scale applications or unit operations may either be presented as a case study or a research paper.

We welcome the submission of papers and case studies on topics such as:

- Solar, Wind, Wave, Gravity, Salinity Gradient Project Case Studies
- Nuclear power including fission and fusion
- Improvements for Hybrid Renewable Projects
- Mega Projects Using Renewable Energy
- Cutting-edge Research in Desalination and Renewable Energy
- Energy Recovery Systems

5. DESALINATION AND REUSE: CLIMATE ADAPTATION

Topic Chair: Mr. Thomas Altman, EVP - Innovation & New Technology, ACWA Power

The role of climate on water security has become obvious around the world. It is exposing communities to a wide range of challenges including depleting aquifers, seawater intrusion into the groundwater supplies, and flooding. Water security can be achieved by integrating different technical approaches. In addition, decarbonizing the water sector contributes to less fossil fuel dependency, which enables new water treatment/distribution systems.

We welcome papers and abstracts on climate adaptation and mitigation on topics such as:

- Brine Management, Valorization and Resource Recovery
- Clean Energy
- Carbon Neutral/Reduction
- Pre-Treatment and Post-Treatment (marine ecosystems and public health)
- Produced Water
- Green (and other colors of) Hydrogen

6. DESALINATION AND REUSE: SUSTAINABILITY AND ENVIRONMENTAL RESPONSIBILITY

The IDA is strongly committed to sustainability and Environmental responsibility in the water sector. We need to be part of the solution, minimizing the negative impact that these solutions could create for the present and for future generations.

We would like to receive papers and case studies on topics such as:

- Water Security
- Pros and Cons of Current Permitting and Regulations
- Environmental Impact Assessments
- Long-term Impacts of Brine Management on the Environment
- Energy and Chemical Efficiency in Desalination Processes
- Sludge Treatment in Reuse
- Challenges facing the Oil and Gas industry

7. DESALINATION AND REUSE: NET ZERO AND A CIRCULAR WATER ECONOMY

Topic Chair: Mr. Adrian Sym, Chief Executive, Alliance for Water Stewardship (AWS)

Net zero refers to the balance between the amount of greenhouse gas (GHG) that's produced and the amount that's removed from the atmosphere. It can be achieved through a combination of emission reduction and emission removal.
The circular water economy is an innovative approach to water management that mimics the natural water cycle by closing the loop on water use and reducing waste.

We would like to receive case studies and papers on topics such as

- Water Footprint
- Carbon Footprint
- Stewardship and Protection of Water Sources
- Closed Loop Systems
- Smart water management in water treatment systems and water distribution networks.

8. DESALINATION AND REUSE: IRRIGATION AND FOOD SECURITY

The four pillars of food security are availability, access, utilization, and stability.

Agriculture irrigation accounts for 70% of water use worldwide and over 40% in many OECD countries. Intensive groundwater pumping for irrigation depletes aquifers and can lead to negative environmental externalities, causing significant economic impact on the sector and beyond. In addition, agriculture remains a major source of water pollution; agricultural fertilizer run-off and pesticide use contribute to the pollution of waterways and groundwater.

We invite you to submit case studies and papers on topics such as:

- Utilization of unconventional water sources, desalination, and water reuse, in water treatment for food, beverage, and agriculture production.
- Development of crops that require less water and/or are more tolerant to higher water salinities.
- Case studies on the efficient use of desalination and recycled water for irrigation.

9. DESALINATION AND REUSE: SOCIAL RESPONSIBILITY

Topic Chair: Dr. Hoon Hyung, President, LG Water Solutions

Social responsibility is a means of achieving sustainability. Adopting key social responsibility principles, such as accountability and transparency, can help ensure the long-term viability and success of any organization or system. Corporate social responsibility is generally categorized in four ways: environmental responsibility, ethical/human rights responsibility, philanthropic responsibility, and economic responsibility

We would like to receive case studies and papers on topics such as:

- Generating and providing water in geographically and socially challenged regions.
- Best practices
- Community Engagement and Education
- Economic Benefits of Clean Water for Local Communities
- Environmental practices
- Safety on-site

10. LESSONS LEARNED IN DESALINATION AND REUSE

A lesson learned is knowledge or understanding gained by experience. The experience may be positive, as in a successful test or mission, or negative, as in a mishap or failure.

We look forward to receiving abstracts on topics such as:

- Project design and implementation.
- Operation and maintenance
- Engagement and Education of operators and community
- White elephants

EVENT INFORMATION

The IDRA World Congress has been recognized as the premier global event in the desalination and Water Reuse industry since it was first held in 1987. Since our first Congress in 1987, the IDRA has been committed to developing and promoting the appropriate use of desalination and desalination technology as a critical part of the solution to address the world's water problems.

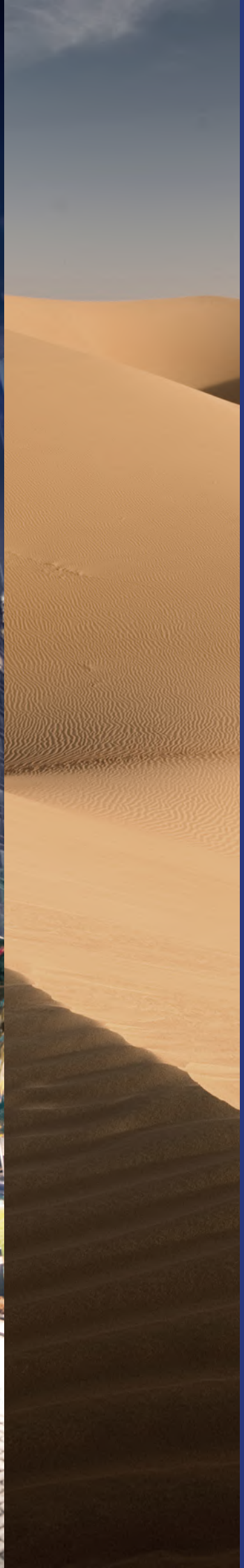
The Congress offers exceptional opportunities to expand your knowledge of current and emerging desalination and Water Reuse Technologies. Participants include end users (utilities and industrial), researchers, consultants, academia, manufacturers, and suppliers of complete systems and components (including chemicals and materials).

ABOUT IDRA

Established in 1973, the International Desalination and Reuse Association (IDRA), formerly known as IDA, stands at the forefront of the global desalination and water reuse community. Dedicated to fostering technical solutions, IDRA actively promotes utilizing these technologies to address the pressing global challenges of clean water scarcity. As a non-profit and non-political organization, IDRA boasts an extensive network spanning over 60 countries, complemented by 15 affiliate member organizations, encompassing a broad spectrum of regional and national entities.

Our inclusive membership base reflects the diversity of professionals invested in the field, including scientists, developers, off-takers, regulators, end-users, engineers, consultants, media representatives, and researchers. These individuals hail from various sectors, such as governments, corporations, and academia, contributing to a rich tapestry of expertise within IDRA.

Furthermore, IDRA operates as a Non-Governmental Organization (NGO) with consultative status recognized by the United Nations Economic and Social Council (ECOSOC). Additionally, IDRA holds a significant role as a member of the UN Water Special Framework for Water Scarcity in Agriculture (WASAG), hosted by the UN Food and Agriculture Organization (FAO) Land and Water Division. This strategic positioning reinforces our commitment to global collaboration and underscores the importance of our role in addressing water scarcity challenges internationally.



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